

The CHILDREN'S NEWSPAPER

AND CHILDREN'S PICTORIAL

The Story of the World Today for the Men and Women of Tomorrow

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WHAT IS A MICROVIVARIUM?

See
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A COTSWOLD BRUDERHOF

German Peasants at Ashton Keynes

LOVE IS OVER ALL

If you are lucky enough to be staying at the Wiltshire end of the Cotswolds this summer, anywhere near the village of Ashton Keynes, you will probably meet, as you wander about the field paths, bearded men in short black jackets and knickerbockers, or women with their hair in plaits over their shoulders, white spotted handkerchiefs over their heads, bright-coloured blouses, and skirts reaching to their ankles with neat aprons over them.

People of Many Nations

You may know that this is the ordinary dress of South German peasants and wonder what it is doing in England. If you speak to the wearers they may only smile and shake their heads, but perhaps they will tell you in broken English that they belong to the Bruderhof. If you should go with them to see it you will find there some interesting people.

You will find nearly 90 men, women, and children living on a 200-acre farm, sharing their possessions as if they were one family. There are English people, German, Swedish, Russian, and other nationalities. They have hundreds of poultry, managed in most modern ways; they keep cows which produce Grade A milk. They grow rye for their bread, make their own bricks, and build their own houses with them when they are needed. They have a Children's House where the children go to school. The German children learn in English, the English children in German, so that when they grow up they will be equally at home with either language.

The Bruderhof teaches its children that the way of Love as Jesus lived it is the only right way to live, and it was because they refused to give up teaching this in the original German Bruderhof near Frankfurt that the English Bruderhof came to be founded.

The Nazis tried to make them teach the narrow Nazi ideas of life, but they would not do that, and they took their children out of Germany, some to Liechtenstein in the Alps, some to Ashton Keynes, where they could teach what they believed to be true.

The Open Door

The original Bruderhof was founded just after the war by Dr Eberhard Arnold, and it grew into a happy and useful community until the persecution of the Nazis broke it up. At first it was only the children who had to leave Frankfurt, but then compulsory military service became the law, and none of the men of the Bruderhof would agree to that. So in April of this year the State Police commandeered the Bruderhof as

a labour camp, all its property was confiscated, its leaders were thrown into prison, and its members exiled. Some went to Liechtenstein and some to Holland, where they are waiting till money can be found to bring them to Ashton Keynes.

You can stay at the Bruderhof as long as you like, for they keep an Open Door, but you will have to share their life and work. You must get up very early, and probably have only two meals a day, and it might be hard to find a corner for you to sleep. Perhaps you would be put in a caravan or in an old railway coach, for there are both of these near the farmhouse waiting for the refugees from Holland. Perhaps you would be asked to help the smiling girl who teaches the kindergarten, or you might give a hand in the carpenter's shop, turning bowls and platters from the oak beams taken from the dismantled barn.

The Printing Shop

Perhaps you might help a fair-haired young German to make his dearest dream come true and turn the old barn into a printing shop. At present it is full of all sorts of stores, but he will tell you enthusiastically that if only they can get their press out of Germany he will soon have it set up in the barn, turning out books and papers about the ideals of the Bruderhof. Perhaps, if you go, you will pick up enough German to join in the songs they all sing so well when the day's work is done.

But whatever else you learn there you will surely discover one thing—that there are groups of people in the troubled world today who believe passionately that the only way of saving it from its suffering and uncertainty is to live the life of service that Jesus lived, and believe it so fervently that rather than give up that faith they are ready to lose everything else.

The Rat in the Bottle

During the demolition of a building in Johannesburg an old bottle was unearthed under a floor.

Much to the native's surprise he saw a full-grown rat inside, apparently well. It was thought that when it was small the rat entered the bottle and became such a size that it could not get out, and so was fed by its parents.

A local resident bought the bottle with rat complete from the native, and kept it in his office, where it created much interest to callers.

For over a year the rat lived in its strange home, but it has died at last.



DANCING IN THE SUNSHINE

King Willow's Close of Play

A FEW more days of Indian summer remain of King Willow's reign, but it came to its end before September with the last county matches played by Yorkshire and Middlesex.

The race between these two counties for the championship was the most exciting thing in a cricket season full of well-fought matches, of spirited batting, and of some resolute finishes. If Yorkshire stubbornness put the county ahead in the last lap, quite as many congratulations ought to go to Middlesex for some of the brightest displays of the summer, in courage, adventure, and resolution.

The two leading counties were not alone in displaying these shining qualities, and the season of 1937 may well go down in cricket history as one where the counties, and the batsmen conspicuously, strove to play more interesting cricket instead of trying to maintain their averages. In batting especially there have been some exhilarating feats, including Hardstaff's century for Notts in 51 minutes and Barnett's century for Gloucester early in the season, which remained the quickest till Hardstaff beat it.

Both these batsmen are Test players, and we may hope that they will keep their form when Australia comes over to test them next year. Hutton of Yorkshire is the opening batsman which 1937 has found, and Hammond of Gloucester and Ames of Kent are still all that can be desired for the middle of a batting side.

Others might be added, but we need only mention among the batsmen the two who made over 300 in an innings, Paynter of Lancashire and R. H. Moore of Hampshire.

The bowling has not been so satisfactory. The fast bowlers have come to their own at times, but Larwood and Voce seem to be out of the picture, and Verity came on best at the end of the season, which, as it turned out, was when he was most wanted by his county.

The New Zealanders showed up our bowling. They were themselves a sound team who played best when they were pitted against the strongest sides—witness their performances against England in the Test Matches. The only dark spot in the year is the retirement of Patsy Hendren, who in his last match made his 170th century.

OUR WISE MEN'S PARLIAMENT

Mr Wells and the Young Idea

KEEPING DOWN THE NOISE

After Sir Edward Poulton's Presidential Address to the British Association at Nottingham, recorded in last week's C N, the educational and physical sections met to hear Mr H. G. Wells on Information in Education and Dr G. W. C. Kaye on Noise and the Nation.

Mr H. G. Wells dwelt particularly on the place which information ought to take in education. By information he meant not the necessary teaching of reading, writing, elementary mathematics, drawing, and languages, but knowledge of the world around us. Information about history should not be limited to dates and dynasties and the lives of kings and the bickerings of neighbouring countries, but should take in the lives and habits and customs of the peoples of the past. It should show how the civilisations of the past were the ancestors of the civilisation of today. It should tell the story of stone and copper and iron and of transport by road, river, and sea.

School Books Out of Date

Geography should not be lists of rivers and capes, but should impart pictures of the Amazon forests, the pampas, the course of the Nile, the landscape of Labrador, and of the people who dwell in these places.

Geography reaches over to biology, where our schools are fifty years behind contemporary knowledge. It is now possible to teach the story of life from its beginning and the succession of living things in Time. There should be information freely and abundantly given in the science of physics and chemistry, becoming increasingly necessary in a world of machinery, optical instruments, radio, television, and aeroplanes. Finally, all young people should be told about the working of their bodies, and about the chief diseases, enfeeblements, and accidents that lie in wait for them in the world. Mr Wells gave his listeners the impression that he would frame his educational system on a kind of Children's Encyclopedia.

Noise All Round

Healthy children obviously revel in noise was an observation made by Dr G. W. C. Kaye early in his address, which nevertheless dwelt chiefly on the steps the Nation should take to get rid of noises which are out of place, and those now being adopted by railways, on roads, in buildings, and in the air.

How the railways are lessening noise C N readers have already learned. In the air there has been a steady diminution of the sound in the passenger's cabin arising from propeller noise, exhaust noise, and engine clatter. This has been achieved by attacking the noises at their source and by constructing cabins with double walls.

Silence is Saleable

Regarding our roads, Mr Hore-Belisha, while at the Ministry of Transport, set up a commission to reduce the noise of motor vehicles. Motor-cycles produce the noisiest traffic on the roads today. The Ministry of Transport contemplates measures for the reduction of such noises, and the industry is discovering that silence is saleable.

Some progress is being made with silencing the road drill, but not much, and more cannot be expected unless the rotary road drill comes into use.

Modern building design and materials do not provide protection from noises, whether inside or outside, like the more solid houses of a generation ago. Many remedies are being tried out, but unfortunately most of them are expensive.

MARVELS OF PATHFINDING

The Way of a Bee in the Air

THE great migration of the birds has begun, and watchers are noting the departure of those that are to winter near the Equator and far to its south, as well as the arrival of those whose summer nesting has been passed up in the Arctic.

Marvellous, we say, and marvellous it is that these frail mites of vibrant activity should achieve their immense journeys, and at the end return to the very places from which they set out.

But those whose business or leisure takes them to the moors just now have in the bees an unregarded example of pathfinding which, within limits, challenges comparison with the most astonishing flights of the birds.

Birds may make their ocean-spanning voyages straight from British nests, but they inherit a sense of route; they follow flight-lines flown over by their ancestors for perhaps thousands of years. With the bees a very different problem has to be faced.

Scores of their lives are placed out on the moors at present so that the insects may enrich their honey with nectar from the heather, which gives it a pleasant flavour. Now the bees have to fly over country of which neither they nor their ancestors have had previous knowledge.

They are removed in their hives from the garden or the farm to the heather country and given liberty to fly at will.

They may cover miles in the course of the day, but they return from each quest over territory they have never previously visited.

They leave the hive on the morning of their arrival, fly away to collect nectar and pollen, then, loaded, return to seek out and enter a relatively tiny structure placed amid vast spaces of heather.

A worker bee lives only six weeks in the summer, yet it learns in that time to find its way to and from its home, then, carried far into strange surroundings, as quickly to learn its way forth and home again, bringing its sheave with it.

A domestic pigeon will fly hundreds of miles to its loft, but it is trained by successive flights over increasing distances to prepare it for its major tasks; the bee must perform its almost incredible marvel of route-finding through the unmarked air at the first time of asking.

Its success is not restricted to penetration of the mysteries of a heath or moor. If a swarm is caught and housed in a strange hive, so long as the queen is there the bee, setting out from its new home in new surroundings, will find its way back, however great the obstruction of walls and fences and shadowing trees. The migration and homing instincts of the birds by no means exhaust the wonders of flight and pathmaking through the trackless skies.

THE BRITISH NOTE TO JAPAN

Aircraft Not Exempt From International Law

Recent events in the Far East have led us to wonder if, after all men's efforts to build up security of law and order between nations, these are to be at the mercy of any nation with the will and the power to disregard them.

The deliberate attack on the people and property of one nation by the armed forces of another when no state of war has been declared between them is the foundation of the Note which was addressed to Japan by Great Britain after the attack on the British Minister to China.

Two motor-cars flying the Union Jack were machine-gunned and bombed at close range by Japanese aeroplanes when carrying the ambassador and members of his staff from Nanking to Shanghai. When this attack occurred the cars were travelling along a road where there were no Chinese soldiers, yet they were swooped upon by the Japanese airmen as if they were enemy forces, and the ambassador was severely wounded.

Our Government asked for a formal apology, for the punishment of those responsible for the attack, and for an assurance that measures should be taken to ensure that such incidents should not happen again.

The Note will be historic if only for the fact that it points out for all the world to read that aircraft are not to be regarded as exempt from the oldest and best-established rules of international law that direct or deliberate attacks on non-combatants are absolutely prohibited, whether inside or outside the area in which hostilities are taking place.

The Oldest Lifeboat

The oldest lifeboat in the world has just celebrated its 137th birthday at Redcar, where it has been stationed since 1802.

Built on the Tyne in 1800, the Old Zetland has saved 520 lives off the Yorkshire coast. The lifeboat is still in excellent preservation.

HOLLAND'S UGLY DUCKLING

Franz Hals in All His Glory

Franz Hals, the immortal Dutch painter, has won a new triumph. Desiring to celebrate the 75th anniversary of the foundation of its municipal museum, Haarlem has organised an international exhibition of his works.

The old city owed him compensation in some form, for it allowed him to die a pauper in its almshouses 270 years ago.

The people who gave him sittings for portraits felt they were conferring a favour on a man who was glad to paint them for a handful of silver. It was their names that lent distinction to his work, their features and costumes that made the picture; and a very lucky fellow they thought him to have such generous patrons.

The world has long forgotten the sitters, and pays its thousands of pounds a portrait, not for the person it depicts, but because Hals painted it. Plump and prosperous Dutchmen who sat for him would have turned purple at the thought, but it is a fact that of the 36 portraits by Hals which have been sold in this country for £1000 apiece only two bear the names of the persons painted in them.

PRESS THE BUTTON

A Surprise For a Village

A teacher was saying her evening prayers in the beautiful new church at Grandvillard, Fribourg.

Like the publican in the Bible, she chose a dark corner for her devotions, so that when the verger came round to lock up the church she was unobserved.

In due time she discovered that she was locked in, and prepared to pass the night in prayer.

Towards midnight, however, her resolution wavered, and she succeeded in finding an electric switch, with which she hoped to light up the tower and so obtain her release.

The switch worked indeed, but instead of lighting up the church it set the carillon ringing a full peal of bells.

This roused the entire village, and they rushed to the church to see what was the matter.

LITTLE NEWS REEL

Contributions have so greatly exceeded payments during the last year that the Unemployment Insurance Fund has now a surplus in hand of £50,000,000.

A hedgehog's nest containing seven young has been found at Middleton in Sussex. The number in a litter seldom exceeds four.

Lord Nuffield has given £24,000 to the National Hospital for Nervous Diseases in London for the building of a research department.

The Port of London Authority has sanctioned the free passage through Richmond Lock of 45 boats belonging to Sea Scouts.

A boy pushed his head between some railings at Peckham in London the other day, and it took ten firemen and three policemen to set him free.

We gratefully acknowledge two pounds sent by a Holloway reader for the Old War Horse Fund.

The Vicar and His Pigeons

The Vicar of Myton-on-Swale (Rev J. H. Mackenzie) has loved pigeons since he was a boy, and now he has fifty in his Yorkshire garden.

There are good reasons for his love of pigeons. One is that his father, General Mackenzie, had a great admiration for them, using them for carrying messages to the front during a military expedition. Another is that pigeons once saved the vicar's life.

A missionary for half a century, he has travelled in Central and South Africa, in China, South America, Peru, and Australia, and it was during one of his Australian journeys that he came to value pigeons as never before. He was carrying pigeons by car across miles of Australian desert when disaster nearly overtook him. He came to a water-hole and found it dried up. The one he had left was 40 miles behind, the next one 50 miles ahead. He had run short of supplies, and his only hope was that he might reach the next water-hole, or that help might come in answer to his appeal.

It was his pigeons which carried his S O S. Releasing six of them, each with the same message, he went on in search of water. Four of the pigeons were killed by birds, but two got through to civilisation. Trackers were sent in search of the missionary. They found him unconscious. Another hour or two and he would have been dead, but his pigeons had saved him.

THINGS SEEN

Two buses ignoring pedestrians on a Belisha crossing in the Strand.

Ten wild pigeons waiting to be fed at a London cobbler's door.

The name of Belvoir wrongly spelt at crossroads in Leicestershire.

Wasps biting straw from the thatch of a bird-house, to use for their nests.

THINGS SAID

I have no patience with those who apply the word incurable to diseases.

President of Australasian Medical Congress

I give £50 to John James Turner for his kindness to my little dog.

A Staffordshire lady's Will

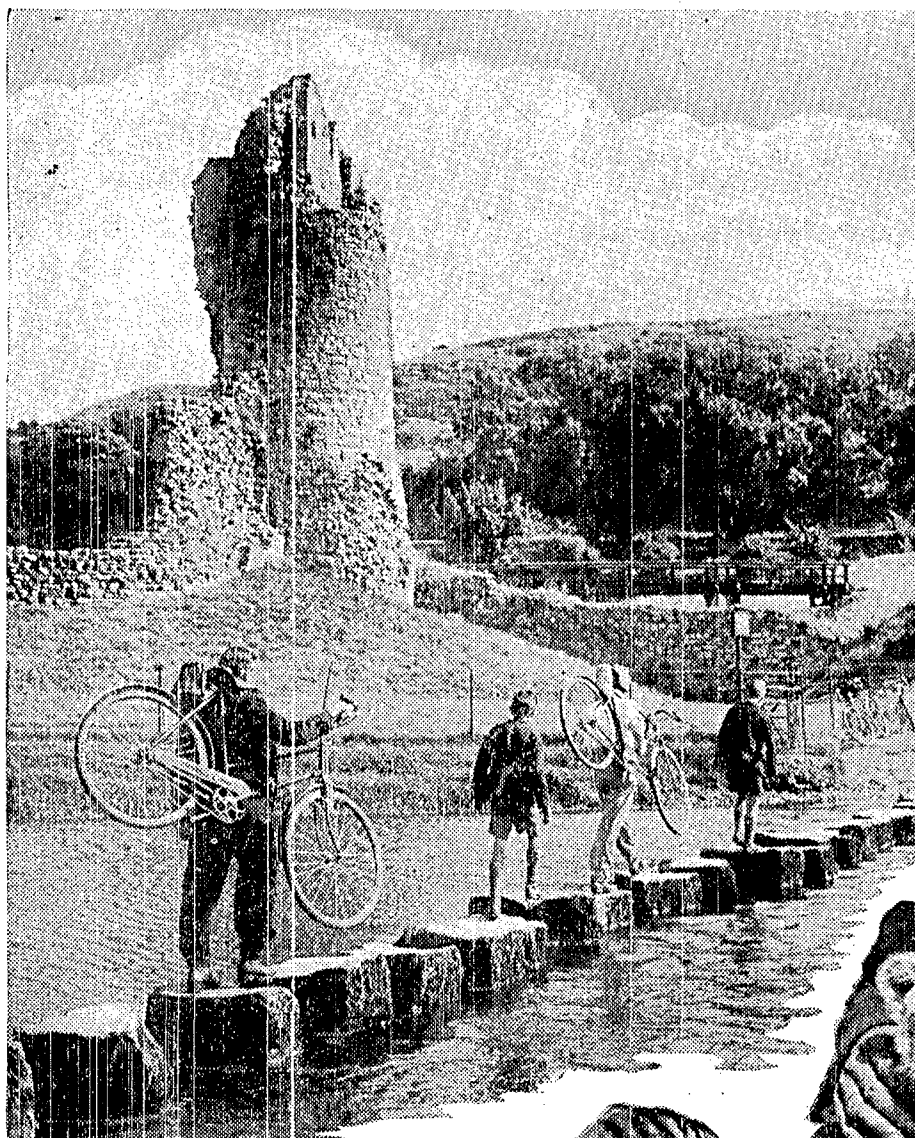
Christian faith fears no danger, and knows that nothing can separate it from the love of God. Dr Vits, preaching in Dr Niemoeller's church.

There are in Europe many signs of a crumbling civilisation. Dr Barnes

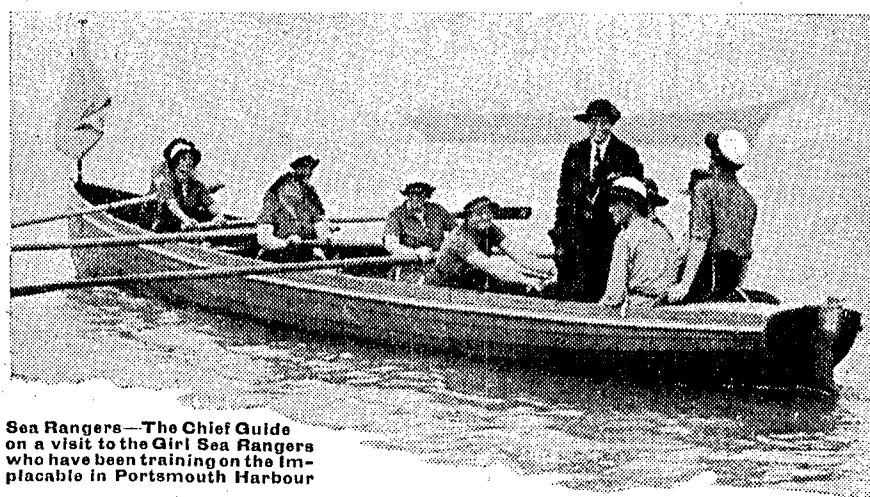
For 43 years Sir Henry Wood has maintained at the Promenade Concerts in the Queen's Hall an unbroken record for perfect punctuality.

Sir Stephen Tallents

Stepping Stones · Cutting Up a Battleship · Sea Rangers



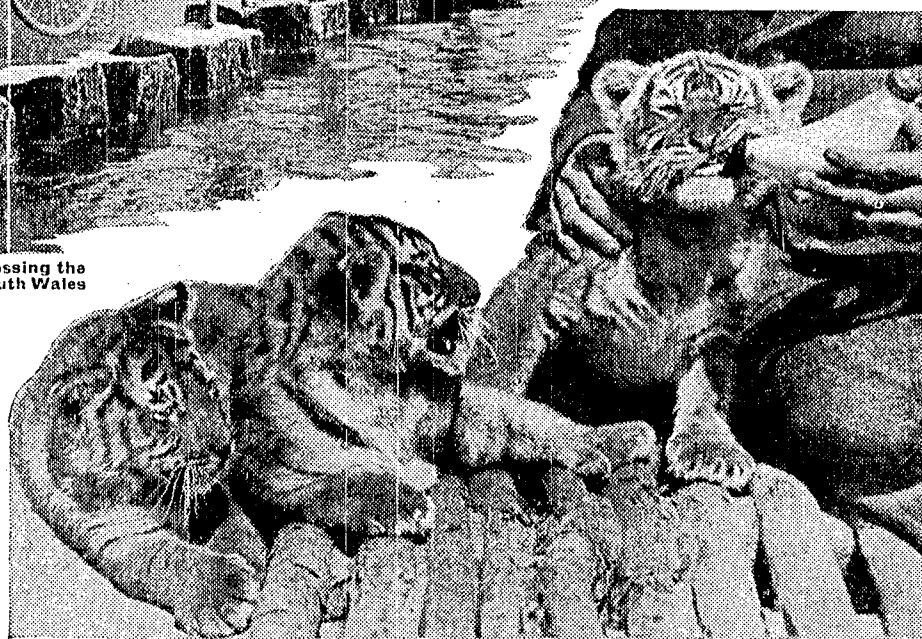
Stepping Stones—Cyclists crossing the river at Ogmore Castle in South Wales



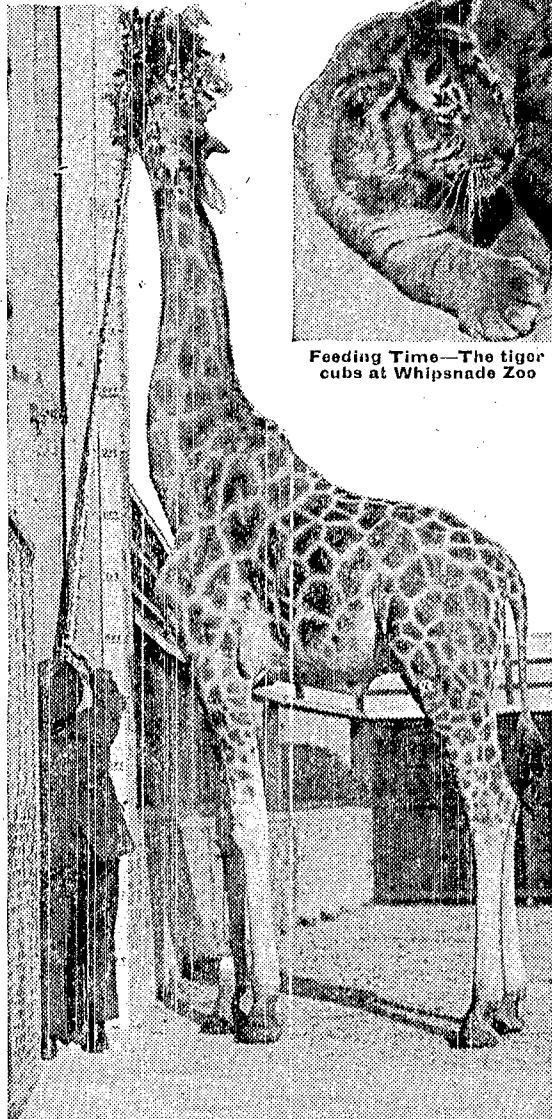
Sea Rangers—The Chief Guide on a visit to the Girl Sea Rangers who have been training on the Immaculate in Portsmouth Harbour



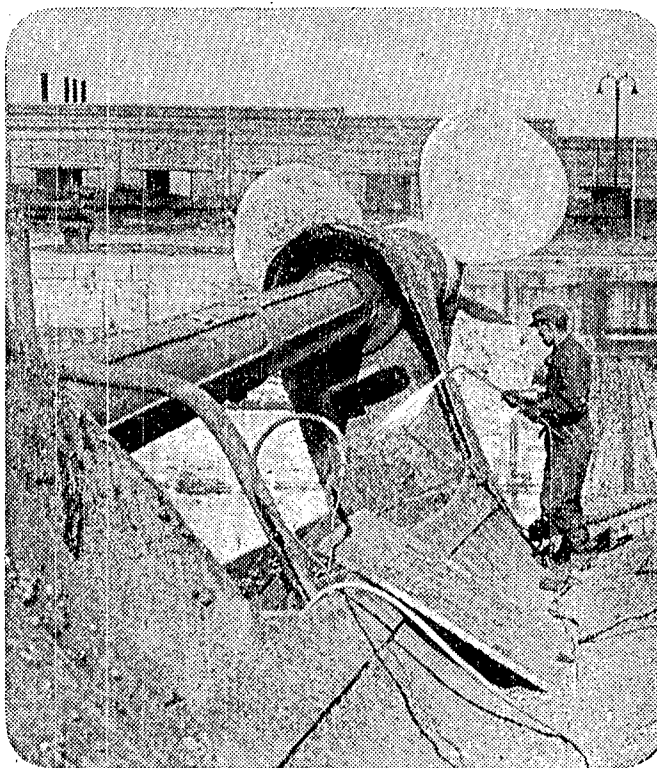
Bringing Home the Catch—Fisher-girls at Clovelly in Devon



Feeding Time—The tiger cubs at Whipsnade Zoo



How Tall?—A keeper measuring the height of a giraffe at Whipsnade. It is the tallest one at the Zoo



Cutting Up a Battleship—At work in Rosyth docks on a propeller of a German battleship which was scuttled after the Great War



Young Hop-Pickers—Gathering the hops in a garden at Beltring in Kent, where the season is now in full swing

A ROMAN HOUSE AT DORCHESTER

The Well and the Window

Two unique discoveries have been made at the Roman house now being excavated at Dorchester.

The well, cut 34 feet into solid chalk, has been cleared of rubbish, and at the bottom was found the finest set of stone pillars ever discovered in a Roman-British house. They have been hauled to the surface and set up in a row near the foundations of the verandah to which they belonged. The other discovery is a window which had fallen inward on to the mosaic floor of the room it once lit. Except for a little cellar light at St Albans, it is the only Roman window found in Britain, and we can still see the rebate of the wooden frame in its splayed sides. It is hoped to raise it into its original position.

A Winter Sitting-Room

In the pavement of the next room a little mosaic medallion of Flora looks up at visitors, the flowers in her hair as fresh as they were, say, 1700 years ago. A winter sitting-room heated by flues has been found in another wing, with much of the coloured plaster still on the wall.

The rooms could be kept beautifully clean with little labour, for like the most modern houses they have rounded joints between walls and floor. Pipes also ran from room to room under the walls, and as the house was on five levels a servant could quickly brush water down from one to the other without waiting to mop the pavements dry.

When the house fell into decay a barbarian broke in and camped in the ruins, his rough hearth of stones and tiles forming a vivid contrast to the central heating of the Roman bath.

New Zealand's Coalfields

New Zealand has several coalfields, with enough coal to supply her for centuries, but so far the search for oil-fields there has not met with success.

Now comes the news that the Government has ordered a survey to be made of the Dominion's coal deposits to see how much coal would be available in the event of any of the present-day processes of oil extraction being undertaken on a large scale.

All the oil needed to keep their motor vehicles moving has to be brought from the East Indies or from the United States in tankers.

New Zealanders do not like to think what would happen if the oil-tanker service were interrupted for a time. Next to the United States, little New Zealand, which makes no cars itself, has more cars in proportion to its people than any other country. With a population of one and a half millions they have 200,000 motor vehicles. Perhaps in the years to come their coalfields may produce all the petrol they need?

A Giant in Manchester

A new giant has taken up residence at Manchester.

It is an electrically operated floating crane, the only one of its kind in the world, capable of lifting 250 tons. It is mainly for use in handling the biggest of the canal lock gates. For salvage operations it can raise tremendous weights; and every day it will pick up and swing over 120 tons while dealing with the general traffic on the canal.

Built in Rotterdam and towed to the Port of Manchester in eight days, this monster crane is provided with two auxiliary pontoons to increase its stability when raising very heavy loads. In the control room two wheels and a lever give the man in charge complete command of every operation.

MAN IS WASTING HIS PRECIOUS EARTH

WE live on a little earth, so very little that it is a mere speck beside our sun, himself a tiny denizen of space!

This, our restricted heritage, is unfortunately for the most part covered with water, water that we cannot even drink! The land of every sort that appears above the seas amounts to no more than 56 million square miles.

When we come to examine the 56 millions in detail, as Professor C. D. Fawcett has done, we find that a very large part is useless to us. No less than 40 square miles in each 100 are either locked in ice or burned dry and arid, so that we are left with a useful world of 34 million square miles.

In its turn this useful land area is divided thus: half is cultivated or readily cultivable, while the other half consists of 17 million square miles of mountain, marsh, forest, or poor and unsatisfactory grazing land.

So we see that useful land is a very precious commodity, to be cherished as the very source of life. Mother Earth is a true expression, but it is also true that too many men and too many nations treat Mother Earth undutifully.

The African Deserts

There can be no doubt that the great African deserts have extended in historic time. The Romans derived great stores of grain from North Africa, which now yields so little. With the fall of Rome, and the rule of the Turk and the Arab, good land was given up to waste. African waste continues before our eyes. A French authority holds that the Sahara has advanced in recent centuries by hundreds of miles.

Fertile soil, created in the ages by natural forces, is now being destroyed by native populations. White rule has hastened the process by protecting these populations. Tribal wars have been reduced; the natives have experienced a declining death-rate; the children live in greater proportion.

Thus more food has been needed and large areas have been cleared to support greater herds. Forests are destroyed, and soil has been quickly robbed of a fertility it took ages to produce. So the land is stripped bare and a desert made, the winds finishing what man began. The streams dry up through the destruction of forests, and a waterless district succeeds what was once a well-watered bush. Forest and savannah become desert.

All Africa is threatened. From the south of the Sahara to the Cape, from Kenya on the east to Gambia on the west, the story is the same. Increasing native populations cry for more land even while the old land is being wasted.

Educate the Native

Professor Troup of the Oxford University School of Forestry sums up the chief causes of desert advance in Tropical Africa as forest destruction, undue increase of herds, and bush and grass fires. Only stern measures can stay the mischief. Forest destruction must be stopped and water saved. Stock must be reduced to protect the continued existence of stock. The native must be schooled not merely in book-learning but in scientific fact.

The two Roosevelt Presidents, Theodore the uncle and Franklin the nephew, have pointed to the march of desert in the United States. They were white men who cut down American trees and ploughed over American soil to sell cheap produce to the Old World.

When we look back at our own recent records, to a date no longer ago than the end of the nineteenth century, we find that we imported from abroad in a year a hundred million cwts of wheat, and that the United States sent two-thirds of this great quantity.

That was why we had a loaf costing only 5d, whereas it is 9d today! The Americans were really selling us cheap wheat obtained by the ruin of natural pastures topped with fertile soil created in bygone ages. We no longer get such cheap wheat, for it no longer exists.

The Sad Case of America

Great areas were used up and abandoned, and fresh fields attacked. At the same time forests were destroyed. Then came along the great winds to scatter what was left, until bare plains faced the sun.

That is why America is spending enormous sums to replant her forests and recover her fertility. It is not easy to do, for trees grow slowly, but it is something that the attempt is being made.

We look north to Canada, now sending us great shiploads of cheap timber, and may wonder how much thought is being given to the life of forests, when one is felled every year merely to make paper for the daily papers of the world. Who is matching replacement against destruction?

It cannot be too urgently borne in mind that forests are natural reservoirs of water. The soil made by the trees absorbs the rain and releases it to form streams and rivers for the nourishment of animals. The buffaloes that roamed virgin plains were the product of the trees. We can imagine, then, what havoc was wrought for America when soil was destroyed to the tune of tens of millions of acres.

We often hear it said that Australia cannot support a big population because she has so much desert. Yet Australia has been adding to the deserts the white man found. Millions of acres of once fertile land have been stripped of verdure by great flocks and then abandoned. So it is with India. We read that the high authorities are perturbed at the reduction in India's forests and the consequent advance of the desert.

What Needs to be Done

What are the remedies for an evil which in lands old and new threatens the fertility of land, and therefore the lives of men? They seem to be these.

1. The conservation of existing forests and the afforestation of many extensive areas.

2. The close survey of flocks and herds to prevent overstocking.

3. Irrigation on an extensive scale, which can often be combined with electrical development, an electric cable becoming the equivalent of a canal.

4. The scientific organisation of agriculture to increase the humus in the soil, assisted by the use of artificial fertilisers.

Always, in producing for the present, we should have regard to the conservation of the world for the future, and last, but not least, there is needed the cooperation of nation with nation.

How to Live Long

It is generally recognised that, though more boys are born than girls, there is a surplus of women in Great Britain.

The figures and the possible causes were examined by Professor F. A. E. Crew at Nottingham. For every 100 girl babies nearly 106 boys are born. But this ratio gradually alters as both grow up. Between the ages of 15 and 19 the numbers become nearly equal, and between 20 and 24 years the females begin to outnumber the males. Thereafter as age group of five years succeeds age group this female ascendancy increases till among the 85s and over there are more than twice as many women as men.

The true recipe for long life, said Professor Crew, is to be born a girl.

ROOSEVELT VERSUS PARLIAMENT

Astonishing Session

PRESIDENT AND PEOPLE

President Roosevelt has signed a Bill for the Reform of the Lower Federal Courts, recording a strong protest that this Bill does not adequately meet the problem of the Supreme Court.

The American parliamentary position is astonishing. As recently as November last the American people made Mr Roosevelt their President for a second term by an overwhelming majority of nearly ten million.

Not only so, but the Democrats (or American Liberal Party) controlled the House of Representatives by 334 seats against 89 held by the Republicans (Conservatives). In the Senate (or upper house) the Democrats had 75 seats to the Republicans' 17.

Thus all appeared clear sailing for Roosevelt to proceed with his New Deal of advanced legislation, which during his first term of office had been crippled by the Supreme Court, which has power to veto legislation it may deem to infringe the Constitution.

A Sea Change

Yet, after less than a year, the first session of the 75th Congress closes with Roosevelt at variance not only with the Supreme Court but with Congress.

Only one of five important Social Reform Bills has become law. It is the important Housing Act, which authorises the Federal Government to lend a hundred million to local authorities in the next three years to provide houses for the very poor. The Act is greatly needed.

The other four measures which have failed to pass dealt with the Minimum Wage and Maximum Hours of Labour, Reform of Judiciary, Re-organisation of Executive, and Crop Control.

The President is at loggerheads not only with the Republicans but with members of his own party. His plan to make Supreme Court judges of young men of Liberal views was opposed by many men of both parties. His appointment to the Supreme Court of Senator Black, a man of very advanced opinion, has offended some of the Democrats. They think him too much of a Socialist.

What of the People?

But are we to believe that the 25½ million American citizens who voted for Roosevelt last November have changed their minds? It seems unlikely that there is any popular revolt against him.

American politics are difficult to understand, and we can only make surmise as to what is likely to happen in the near future. It is, however, plain that in America the way of an ardent reformer is not an easy one.

How the World Grows

In spite of all the troubles the world brings on itself its population is still going up. Professor C. B. Fawcett estimated it in his address at Nottingham at 2000 millions.

It has greatly increased in the last 200 years. The European populations have multiplied sixfold since 1700; both Chinese and Indians have trebled in that time. All, or nearly all, of this multiplication of numbers takes place in the northern temperate lands, and the increase has been maintained in the present century.

The density of population in these northern lands is amounting to 60 persons the square mile, is three times that in intertropical lands, and more than four times that in the new countries of the southern hemisphere.

Since 1900 Greater London and Greater New York have doubled their populations, but Tokyo and Shanghai have increased fourfold and tenfold.

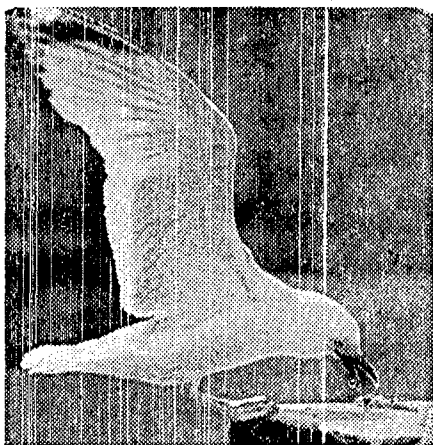
BEHIND THE SCENES

A little while ago someone said to a bank manager at Bracknell in Berkshire: "Here's three hundred pounds. Will you use it to take a hundred children to the seaside?"

No one but the bank manager knows who said this, but the unknown man must be glad to know that because of him 100 children have spent a glorious week under canvas at Easton Bavents, near Southwold. There were 50 boys and 50 girls, and no doubt they all love the man behind the scenes.

ADDING TO THE EMPIRE

Three new islands have recently been added to our Empire, for the cruiser Leander has annexed uninhabited bits of territory midway between New Zealand and South America. Landing parties have hoisted the British flag on Henderson Island near Pitcairn Island, and two coral reefs known as Ducie and Ognio Islands, both with lagoons suitable for the landing of seaplanes.



A tit-bit for the gull

LOST ON HOLIDAY

While Mr John MacFarland was on holiday at Hove a little while ago he forgot the address of the house at which he was staying.

He had travelled from Glasgow to the south, and had then gone for a walk by the sea. When he thought of turning back to his apartments he could not remember the address; and, as the police could not help him, he spent the night in a cell. In the morning his landlady inquired for him at the police station, so all was well.

LET THERE BE LIGHT

Rev W. Wainman, Vicar of Skipwith in Yorkshire, and his wife are to do a lovely thing.

They have been married 40 years, and as a thank-offering for all the happiness they have enjoyed they are to put electric light in Skipwith's old church.

We remember Skipwith as one of Yorkshire's out-of-the-way beauty spots. The church has stood for centuries, the tower having been built by the Saxons. There is old glass in one of the windows, and a magnificent south door thought to be 700 years old.

We do not wonder the vicar and his wife love their beautiful old church, and that they are glad to be able to shed more light on it.

RIDING THROUGH A GARDEN

The State Railway executive of Sweden takes pride in being the leading landscape-gardener of the land.

Every station and signal box of its line, which means 4500 miles of rail, is set beautifully in gardens bright with flowers and shrubs. The passage-ways are lined with flower-boxes and hanging potted plants. No advertising of any kind is permitted.

This happy condition began as long ago as 1862, when Olof Eneroth, a horticulturist, revolted at the appalling ugliness of the advancing railway lines, and in one decade laid the foundations of today's beauty.

The Setting Sun Set Down in a Sketch Book

DR VAUGHAN CORNISH, the geographer who is so enthusiastic an admirer of our English scenery, has been showing his sketches of the setting sun to the British Association.

He has been attracted, as millions have been before him, by the great increase in the apparent size of the sun when it is sufficiently near the horizon to be viewed together with the features of the landscape.

Dr Cornish has made a series of drawings of the sun when it was close to the peaks on the crest-line of the Bernese Alps, each drawing being on a sheet of paper of similar size but made from a greater distance.

Comparing these sketches, he has found that at the greater distances not

only is the sun's disc apparently enlarged, but also the apparent size of the features of the skyline is enlarged in about the same proportion. Without being conscious of what he was doing, the artist drew a smaller arc of the horizon as he got farther away from it, owing to his concentration on his work.

He has also found that the apparent enlargement of the setting sun is not confined to cases where the skyline is distant. Thus, the disc is often more enlarged when seen low down through the branches of a nearby tree than when approaching the distant horizon of the sea. This, he declares, is another example of the unconscious narrowing of the field of attention when the amount of observed detail is increased.

COALS TO NEWCASTLE

Taking ice to Labrador sounds like carrying coals to Newcastle, but it has had to be done this year.

As a rule there is no scarcity of icebergs along the coast of this wintry land, and packers of salmon have had all the ice they needed ready to hand. This year the icebergs have been few in number, and since the break up of the ice along the shores the salmon packers have had difficulty in finding enough ice for their work. A schooner with ten tons of ice has had to be despatched to the Labrador coast.

THE FIELDER

One of the best fielders in Yorkshire is a fox-terrier.

He is known as Billie, and the Altofts Cricket Club is justly proud of him, for this nine-year-old dog watches every match on the cricket ground and takes his share in the game. A most important share it is, for, whenever a boundary is hit and the ball vanishes in long grass or in a ditch, Billie races off to the spot, hunting about till he finds it. He invariably returns the ball to the groundsman, receiving a biscuit as his reward for every ball found.

AFTER 32 YEARS

The official in charge of a national building at Valloire in Savoy was surprised to receive a huge parcel the other day.

Opening it he found ten valuable pictures by Jean Cousin, the 16th-century painter who is regarded as the founder of the French School, and François Boucher, the 18th-century French Court painter. These paintings had been on the walls of the chapel of the monastery, and had been stolen when the monks left 32 years ago and the French Government classified the building as a national monument.

The paintings have been well preserved, but there was no indication from whom they had come.

A MANATEE OFF THE IRISH COAST?

A manatee is said to have been seen off Renvyle, on the Galway coast. This mammal is a member of the family of sea-cows and is rarely found far from the shore, where it feeds on seaweed. It is a slow swimmer and is a very inoffensive animal.

The origin of the legend of the mermaid is attributed to this animal, probably from its curious appearance, with the head and shoulders projecting above the water as it feeds its young, which it holds with its flippers.

Manatees generally associate in small herds and are to be found on the coasts and in the lower reaches of big rivers in the warmer parts of the world. They rarely visit Europe.

A PLUMBER AND HIS POETRY

A plumber who writes poetry has been making a stir in France. He is Marcel Garnier, who lives in the little town of Moret-sur-Loing, a spot dear to Robert Louis Stevenson.

Between mending leaks and attending to his hard work Marcel has written much verse. Now Madame Mary Marquet, the celebrated French actress, has introduced his poems to the public, and his name has appeared on the posters of the famous Comédie Française. Success has not turned Marcel's head. He is still plumbing, and still writing more and better poetry.

RUSSIA'S STONEHENGE

A Soviet Stonehenge has been found in the Maly Kavkaz Mountains in Transcaucasia.

Extensive excavations are to be carried out by the Soviet Academy of Sciences. At present all that is known of the discovery is that there are about 50 piles of huge stones, and that they are thought to have stood for at least 3000 years.

How FOOD HAS RISEN

Taking all sorts of food consumed by an average working-class household, it is reckoned that in July this year it cost £7 to buy what £5 bought in July 1914.

That is the same as saying that a wage now would have to be 40 per cent higher than in 1914 to buy the same food. How often we forget that what counts is not the face value of money but what money buys!

With the exception of sugar, food is very much dearer now than when the Great War broke out 23 years ago.

VIKING POTTERY

A Viking cooking pot made of hard-baked clay has been found near a partly excavated settlement at Freswick Links, a few miles south of John o' Groats.

WHEN THE LARK SINGS

And singing still dost soar, and soaring ever singest. Shelley

How long does Shelley's skylark sing? An answer supplied by a north-country naturalist, Mr Rollin, is that the average length of its song is just under two and a quarter minutes.

With a stop-watch, and exercising great patience over some weeks, Mr Rollin timed over 500 songs, an example any C.N. reader might follow. He discovered that the larks which sang longest all kept together in the same field, which suggests that perhaps the older birds flock together, and from age and practice have become the more efficient singers.



The Village Blacksmith

PREVENTING DROUGHTS AND FLOODS

In considering the effect of woods and forests in conserving the water supplies of a country, Professor E. J. Salisbury says that if we are to avoid floods and droughts we ought to preserve rural England for practical reasons as well as for those of beauty.

With the passage of years the surface of our roads has become better, and ditches are kept cleaner, so that the land water flows faster to the rivers and the sea. Afforestation of the catchment area of the Thames and other rivers would in the long run be more effective and less costly in preventing floods and droughts than grand-scale engineering works in their valleys.

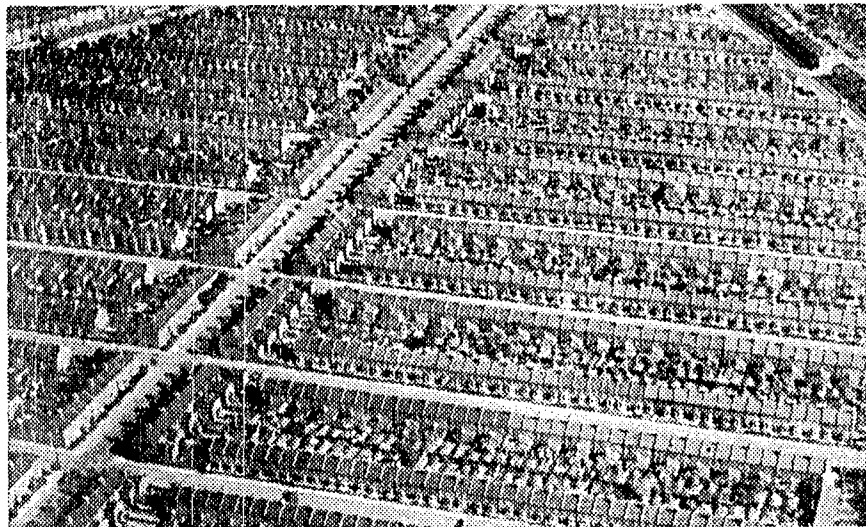
THE FILM WORLD

The famous French soldier Marshal Pétain now lives the quiet life of a farmer at Villeneuve-Loubet.

A film studio borders his estate, and recently they were making a picture dealing with Napoleon. The Marshal was making his daily round of the farm when he came across the film Napoleon, complete with long grey coat and familiar hat, strutting up and down a field behind the studios.

The Marshal came up to him and said, "Well, you're playing Napoleon. It is a fine part."

Napoleon raised his head and replied, "I'm sorry, friend, I don't speak French."



WHAT AN AIRMAN SEES OVER THE EAST END OF LONDON

CHILDREN'S NEWSPAPER

SEPTEMBER 11 1937

The Empty Pedestal

THE C N has long been asking that the Empty Pedestal in Trafalgar Square should be filled with a statue of the Chief Scout on horseback. There is no man more worthy of this high honour.

The Government is trying to do for us all the work that the Chief Scout has been doing for boys and girls for 25 years and more. He has set an example that has been followed all over the world, and has raised the greatest youth organisation ever known. There should not be any question of his fitness for the empty pedestal, and the money would be easily forthcoming.

It will be a great pity if the fortunate fact that the Chief Scout is alive is allowed to stand in the way of so conspicuous a recognition by the nation of his high qualities and his great fame. Why should all our great men have to die before the nation thanks them for their lives?

We see with much interest that the suggestion has been made to put a statue of Cecil Rhodes on the empty pedestal. It is an interesting proposal, and must command great sympathy as there is no public statue of Rhodes in London.

Cecil Rhodes is among the immortals, and happily the Chief Scout is still with us. If we cannot have a living man in this place it would seem that the empty pedestal cries out for Cecil Rhodes on horseback, as he is seen by the people of Kimberley in South Africa.

What Will They Leave Behind?

AN exhibition of pictures and drawings of Victorian life has forced the critics who sneer at the Art of that wonderful reign to the confession that Victorian Art was good as well as bad in places.

One such writer has been startled to realise that painters of many modern pictures, the people who ignore life and its representation in favour of circles, triangles, and ridiculous caricatures, are not bequeathing to posterity true pictures of the life of our own generation. It is good to have this confession.

There are honest artists at work, and their pictures will survive to tell the future what our age is really like, but the rest, the so-called abstractions, the creations of so-called artists who strive after novelty and sensationalism, will perish, as they deserve to.



THE EDITOR'S TABLE

John Carpenter, House, London

above the hidden waters of the ancient River Fleet, the cradle of the Journalism of the world



Race of Wage and Price

PRICES go up and wages go up, and it is difficult to say which element is winning a race on which the welfare of millions depends.

In the first seven months of this year, it is officially recorded by the Ministry of Labour, 3,200,000 workers received an increase of £413,000 a week in their wages. The greater part of the working population has received no increase at all this year, though food and all other articles cost much more money. It seems, therefore, that the workers as a whole have lost in real wage (what money wages will buy) so far in 1937. Many wage negotiations are in progress.

Why not set up a permanent Wage Commission to study the question continuously?

Good News From Jarrow

THE new sports stadium at Jarrow, the building of which meant so much good work, has been opened. Four subsidiary steel industries will be in full working order by the end of the year. The new steelworks is now assured of its capital. The Jarrow wage fund is rapidly increasing. A great battle has been won.

The Spider at the Stumps

A CORRESPONDENT writes to tell us of a cricket match where the wicket remained so undisturbed through the innings that *three spiders spun their webs between the stumps*.

We are not sure whether to take this as a slur on the bowlers who were unable to hit the stumps or a reflection on the slowness of Yorkshire cricket. On the other hand, it may be a tribute to the dour determination of Yorkshire spiders.

From our own experience we can bear witness to the swiftness of a spider in spinning its threads. Between the hour's interval of our morning tea being brought in and our departure from the bedroom a Kent spider had stretched his silken thread across the doorway.

Beauty and the Beast

VISITORS to Dorset this summer have found two new landmarks within a few miles of each other. One is at Upton, near Weymouth, where a tall, graceful tower of latticework has been set up over an oil well neighbouring a stone circle which may belong to the Bronze Age.

The other looms hideously over Thomas Hardy's Egdon Heath, a huge hangar painted red when a few more paltry pounds could have made it a pleasant green. We almost wish someone would accept the apparent invitation to treat this perfect target of the R A F with a richly-deserved bomb.

At Stokes Bay

(After a very long absence)

Hello, Sea!

I knew that you had not Forgotten me;

That I would find

Rest for my rambling thought:

Food for my mind.

Hello, Sea!

You and your heartening songs Bring life to me.

Egbert Sandford

A Watch at Wenatchee

NEWS comes from Washington that a fish caught at Wenatchee has been found to have an English gold watch 200 years old inside.

Even if this was an old-fashioned fish, it was hardly behind the times.

Tip-Cat



TOOTHACHE Stops Speaker, says a headline. It was the tooth that should have been stopped.

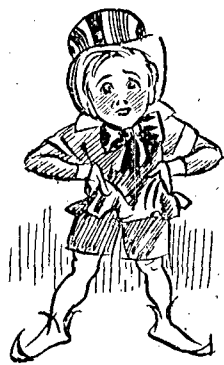
MONEY is losing its power, we are told. It is spent.

TUBE men have a band of their own. A rubber one?

A HOLIDAY-MAKER going to the seaside lost his bag. A hard case.

Peter Puck Wants To Know

If road menders mend their ways



TOURISTS are said to be the third great industry of the world. A lot can be made out of them.

SOMEONE suggests starting a newspaper for amateur detectives. They will have to use tracing paper.

PEOPLE like to have a hand in matters that concern them. Some prefer a fist.

OLD crystal wireless sets may be valuable. Sound investments.

WITH the new cooking ovens, the toe of your shoe will open the door. This raises a new point.



THE BROADCASTER

C N Calling the World

THE Forestry Commission has now planted 345,000 acres.

THERE are more than seven million domestic consumers of electricity in this country.

A NEWCASTLE mission has distributed 3000 bunches of heather and flowers among poor homes.

JUST AN IDEA

It is an excellent thing to discover what we cannot do, and to do something else with all our heart.

Best of All

By The Pilgrim

WE looked over a garden wall and found a man clipping the edges of the lawn. "So you are home again?" we said. "Have you enjoyed your holiday?"

"Oh, yes," he said. "We've had a good time. A holiday abroad is always interesting."

"What did you like best?"

The man in the garden smiled, and there was a twinkle in his eye as he replied: "I suppose you want a really straight answer. France was wonderful, and Italy is beyond words; but it was thrilling seeing the old familiar things again, and talking with a neighbour who seemed glad to see us. I was glad to be back in the garden. It is a great experience travelling abroad, but coming home is best of all."

The Policeman

From a Correspondent

DRIVING in a friend's car in one of the big cities in the north of England, we came to a busy cross-roads.

Our friend pulled up behind several cars, and presently the policeman on point duty waved him on; but as we drew level with him the policeman's hand went up and we stopped, with traffic on every side.

For a moment we expected to receive the admonition of the law, but the policeman smiled as he said: "Excuse me, sir. I'm finishing here tomorrow, and I thought I'd say goodbye. You've always had a nod for me, and have always said Thank you by raising your hand. Good day."

He waved us on, and the traffic went roaring by again.

Let Us Make a Heaven of Earth

Higher, higher, will we climb,
Up the mount of glory,
That our names may live through time
In our country's story;
Happy, when her welfare calls,
He who conquers, he who falls!

Deeper, deeper, let us toil
In the mines of knowledge;
Nature's wealth and learning's spoil
Win from school and college;
Delve we there for richer gems
Than the stars of diadems.

Onward, onward, will we press
Through the path of duty;
Virtue is true happiness,
Excellence true beauty.
Minds are of supernal birth,
Let us make a heaven of earth.

James Montgomery

A Prayer For a Cheerful Spirit

Almighty God, who hast created us for Thy glory and service, give us grace, we pray Thee, to hallow every gift, and improve each talent which Thou hast committed to us, that with a cheerful and diligent spirit we may ever serve Thee; and whatsoever we do, may we do all in the name and to the glory of Jesus Christ our Lord. Amen

TWO WONDERS NOT YET SEEN IN THIS COUNTRY

The Planetarium and the Microvivarium—Stars, Suns, and Microbes

It is one of the things we should always be ashamed of that there is no Planetarium in these islands. The new one at the Paris exhibition has created great attention, and now in the United States comes

its companion. The Planetarium for worlds in the skies, the Microvivarium for life in the waters—they are two of the 20th-century wonders that have not yet reached the British People.

AFTER the Planetarium comes something newer, the Microvivarium. The Planetarium shows the movements of sun, moon, and planets among the stars, which are dotted as bright pin-points of light on the dome of the theatre where the onlookers sit.

The Microvivarium shows the lives of the all but invisible creatures which can be seen through a high-powered microscope in a drop of prepared water, or of the broth in which the bacteriologist rears his bacteria.

The bacteriologist looks downward on these creatures through the lenses of his microscope. In the Microvivarium the illuminated discs which he sees through his microscope are enlarged thousands of times and displayed flat against a wall. These wall discs, three feet across, magnify the microscopic creatures perhaps a million times, making some appear as large as lobsters, and at the same time reveal them in their habits as they live.

Watching the Drama of the Microscopic World

IN Germany are a round dozen planetariums, in the United States several, but here we are still trying to get together enough pennies to build one, so we may have to wait a long time for a Microvivarium in London, though Chicago raised one and New York is establishing another. About 200 people will be able to sit and see, as if they were in the Aquarium at the Zoo, the life in a drop of water.

On one of the blank white screens (like big portholes) will flash the movements of the animalculae. Some with raylike spikes will capture single-celled creatures and swallow them. Green ball algae will roll from darkness to light like moths. Flagellates will lash themselves forward with their tails like whips. Amoebae, mere lumps of living slime, will change their shapes like rubber balls, and will split into halves to make two creatures where there was one before. Larvae of mosquitoes and water-fleas will display their beating hearts. There is no end to the marvels the microvivarium will throw on the screen.

To the professor in his laboratory these marvels are an everyday sight; but it is no easy matter to transfer it to the screen. The professor looks down on the water or other fluid containing his specimens imprisoned between two slips of glass. But if he were to turn his slips of glass to the perpendicular, and send a powerful beam of light through glass and fluid and microscope lenses, the display would soon come to an end. The water would leak away. The light would kill some of his specimens.

How the Living Pictures are Prepared For the Screen

CONSEQUENTLY all the skill of Dr George Roemmert, the inventor of the Microvivarium, and all the ingenuity of the opticians of the Jena glassworks have been requisitioned to make the spectacle possible. The specimens are allowed to rest horizontally on their glass slide. Mirrors and prisms reflect the image so that it appears vertically on the screen. Lastly the beam of light passes through a series of cooling liquids which filter out the heat rays. Fifteen years have

been spent in perfecting the apparatus, and in the right preparation of its living pictures.

Dr Roemmert's bacteria and protozoa are harder to keep in health and purposeful activity than those of any zoo. A mere drop of water from a pond shown with all its teeming life would make a very poor show. The life teems too much; it is too tangled to present itself clearly. Dr Roemmert prepares the actions of his microscopic creatures as if he were directing a film.

He begins with most carefully-distilled water. Ordinary tap water, treated as it has been with purifying chemicals, will not do; nor will distilled water till it is prepared, for it has nothing in it to sustain life. So the distilled water is first made habitable by putting into it a sort of tea made of hay, or a few

living plants like algae can be slipped in. There must be just enough food but not too much, and the temperature must be just right.

Then, when Dr Roemmert has got the surroundings to the right pitch, he introduces a few gentle inoffensive micro-organisms. They are transparent in nature. He feeds them with a red dye so as to make them red and visible. That is Act One, Scene One.

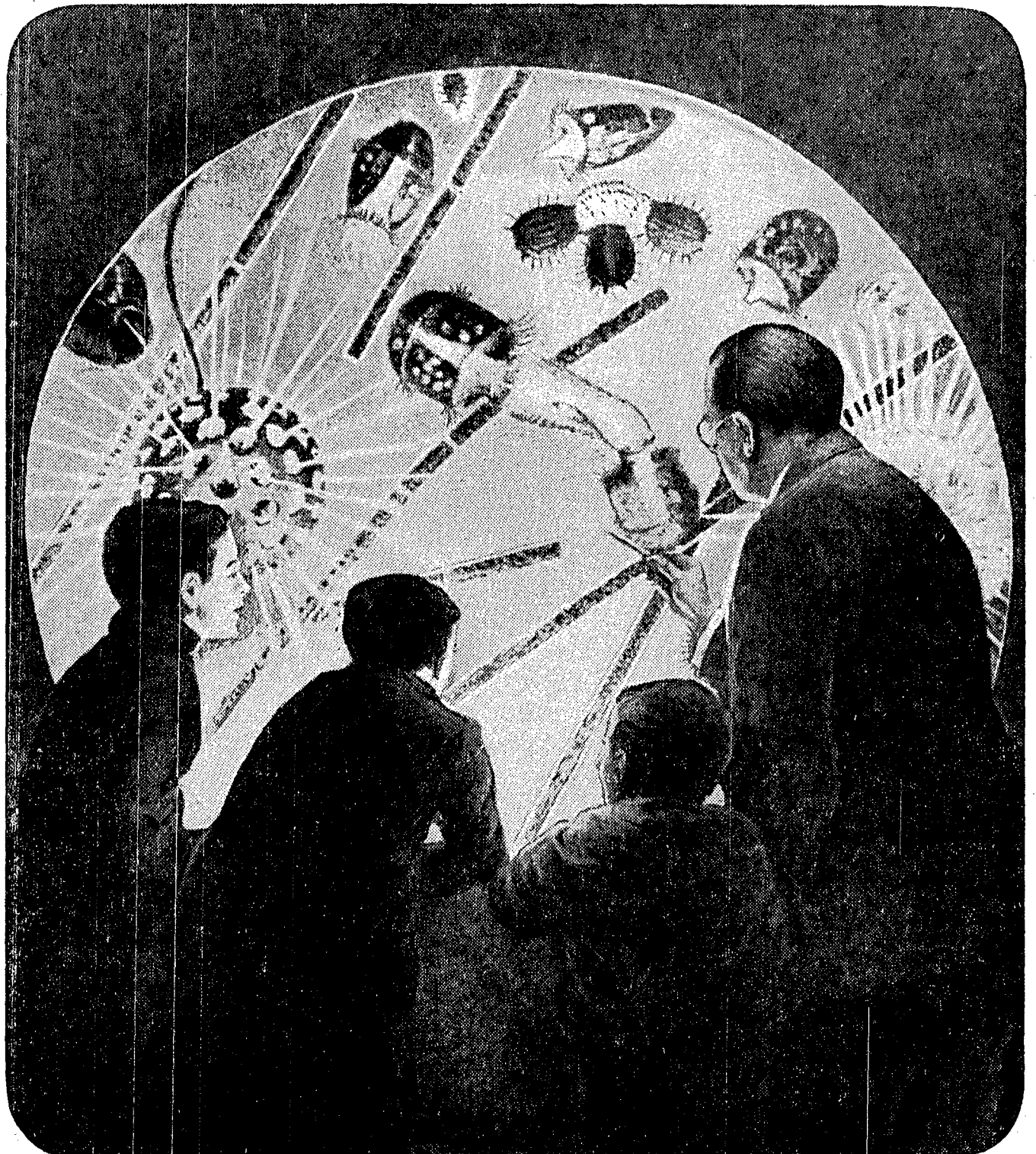
Before Scene Two appears on the next porthole screen a title appears beneath it, as in a kinema. It is one word, *Paramecium*—the slipper animal, in plain English, because of its shape. They are lively creatures, twisting and wriggling as they look for food.

Scene Three shows "Nature red in tooth and claw." Among the slippers appear barrel-shaped creatures which set

about the slippers like hawks swooping on a chicken run. They do not have it all their own way. Other food seekers appear, trumpet-like creatures, or stentors, and these see to it that the barrels, which know the knack of splitting into two, do not multiply too rapidly.

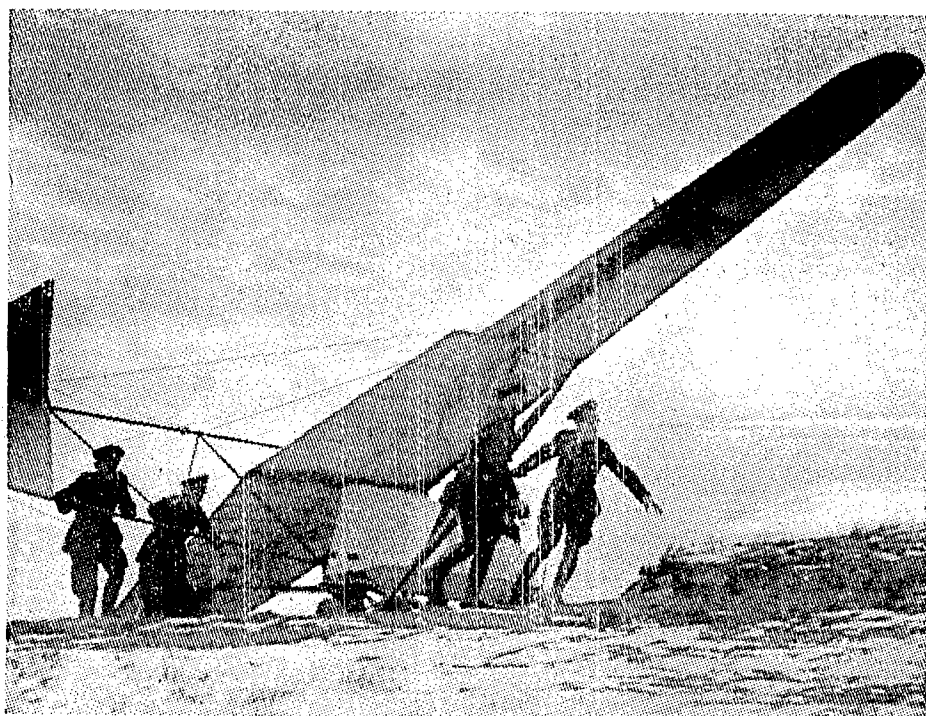
There are others, fighters and fodder, and in the Microvivarium the beginnings of the struggle for life on the earth is revealed in all its complexity.

Our picture reveals what a mixed colony of some of the smallest living things looks like while these creatures are in action. It is said that when Leeuwenhoek, the Dutch microscopist, first beheld through his lenses this hitherto unseen world of life he gazed on it almost with horror. But science has continued to learn from the discovery, and is learning still.



Microscopic life enlarged millions of times on one of the screens of the microvivarium—from a photograph by Dr George Roemmert

THE SAIL-PLANE GLIDERS OF



Yachts of the Air

Sails will never disappear from the sea, in spite of steam and oil, for there are few more satisfying sports than yachting. As with the sea, so with the air. Planes with high-powered engines fly at hundreds of miles an hour, but gliders and sail-planes, like yachts, depend on the breezes for their motive power. Here are some interesting facts about this fascinating pastime of gliding which has become so popular in many lands.

THE glider showed the way to the aeroplane. Now the glider has taken the air again to show what can be done with the wind.

The glider of today is a very different invention from the experimental gliders of pre-aeroplane days. For one thing it is lighter. But, far more important, it can keep up in the air for miles and hours where the old gliding machines sustained themselves with difficulty for yards and minutes.

The earliest gliding machine, of Lilienthal, hangs in the Science Museum, a cumbrous affair, just in front of the early aeroplane of Wilbur Wright. Lilienthal, like Chanute who followed him, and afterwards, when in America, taught the Wrights a good deal about the shape and uplift of the wings of planes, and also Pilcher in England; all faced the wind downhill, with their gliders on their shoulders, trusting the wind to let them ride on it as it lifted their wings. None got very far, and Lilienthal and Pilcher both suffered grave accidents which put an end to their flying.

Launching the Glider and Finding Helpful Winds

THE gliders and gliding planes of today are guided by a different technique. The winged plane, as before, takes off on the side of a hill, but does not depend on the impetus gained solely by the rider. His machine is launched by running helpers who haul on an elastic rope and catapult the glider into the air, or by a winch and wire hauling it as if it were a kite.

Once aloft the human glider is pilot, weather forecaster, engineer, and, by his management of the wind, the only propeller the machine has. It is up to him to see that the wind does for his machine what he wants it to do. What, with the help of the wind, he

can make it do would have seemed incredible to the pioneers of gliding flight, or even to the pioneers of flying in machine-propelled and supported aeroplanes. The first flight of the Wright brothers after they had fitted an explosion engine to their plane was three-quarters of a mile; and that feat set all the world wondering 34 years ago. But in Germany a pilot has made a flight in an engine-less glider lasting 41 hours, reaching a height of 15,000 feet, and travelling 300 miles from point to point.

In England the glider pilots have not got so far, but a few weeks ago Mr Philip Wills travelled 98 miles

from Dunstable in Bedfordshire to Dover, reached a height of 4500 feet, and might, if he had taken a chance, have crossed the Channel. Long-distance flights are not easy in Great Britain, because a glider travelling with the prevailing wind current comes too soon to the sea.

The situation reminds one of the drawing in Punch of the American who showed alarm while travelling in an English express train, not because of the speed, but lest, as he explained, the train should run off our little island.

When we speak of a glider travelling with a prevailing wind on its tail we must take care to avoid leaving the impression that the wind blows it along. Almost the contrary is the fact, because the glider very often at the beginning of the flight must go out to meet a contrary wind to get the first boost up. After that nothing can keep it up except air pushing it up from below. The clouds ascend in the sky, and we can see them rising. They are pushed up by warm air rising from the warmer ground to the cooler regions above; and, as the mass of a towering cumulus cloud reveals to us, the horse-power is considerable.

Preparing the Novice For His Gliding Tests

IN the same way spirals of warmer air lift the glider higher and higher and sustain it. It is the business of the pilot, when he is started, to seek and find and stick to these rising currents; and when he is sufficiently experienced he tracks them out, or marks them down, by noting the clouds which are making use of the same motive power. What is good enough for the clouds is good enough for him.

But there is a good deal to learn before a glider can become a miler. The first stage of the beginner is a modest effort. He is seated in an elementary framework with small wings and no closed cockpit. He is tugged along the ground and learns to keep his machine upright. When he

can get along without falling sideways he is jerked upward into short hops, just long enough to teach him to land. Then he is launched from a short way up the hill, then from the top, and is ready for his three gliding tests. The first is a straight glide of 30 seconds from the top, then two flights of 45 seconds, with a turn to right or left. The third test exacts from him the ability to soar for five minutes and make turns without losing height.

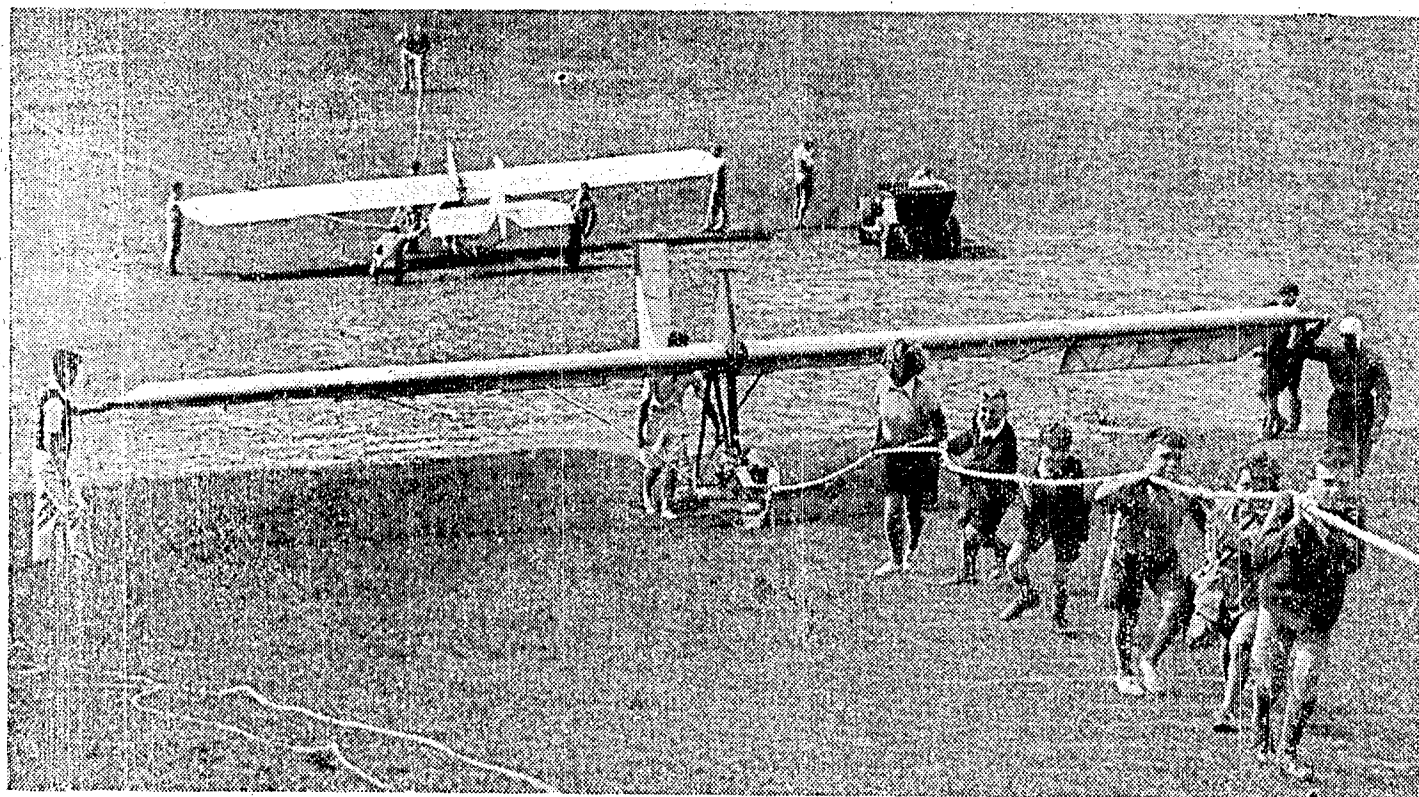
Germany's Thousands of Pilots of Motorless Planes

AFTER that he is promoted to a sail-plane, which is harder to bring down properly than to keep up; and the knowledge of side-slipping and quick turning is acquired bit by bit. The first two tests can be acquired by a resolute learner in a fortnight. The rest depends on his keenness and natural ability.

Keenness is growing in the steering and manoeuvring of these yachts of the air. The largest club, of 300 members, is the London Gliding Club at Dunstable, which was lately visited by a number of friendly Germans, in whose country gliding has reached a rare pitch of excellence and popularity. There are 15,000 German glider pilots, and one in every 15 villages has its gliding club.

There are other English clubs which have joint meetings at Sutton Bank, near Northallerton, in Yorkshire, Bradwell in Derbyshire, Shoreham on the South Downs. They number now nearly 50, with a total membership of about 1000.

German gliders have come over here to lend a friendly hand at Dunstable. It is a return visit to that made by English gliders when the International Gliding Competition was held at the Wasserkuppe in Germany. For gliding a hill and a dale are needed. The Wasserkuppe has them. There is just the right slope and just the right lilly country round about to afford abundance of good gliding winds and rising currents. One of the requisites of a



Many Hands Make Light Work—Boys helping to haul a glider uphill to the starting point at Dunstable

IN THE WINGS OF THE WIND

gliding club is to have a meteorologist as a director of flights, to detect the presence or the imminent appearance of an uprising wind.

When the English team went to the Wasserkuppe meeting their director was Professor David Brunt, who had an uncanny sense of when the wind was good, when it was not so good as it seemed, and when it was likely to get better or worse. More than once he kept British machines back, waiting for a wind, while some of their German competitors were retrieving their sail-planes from the valley below.

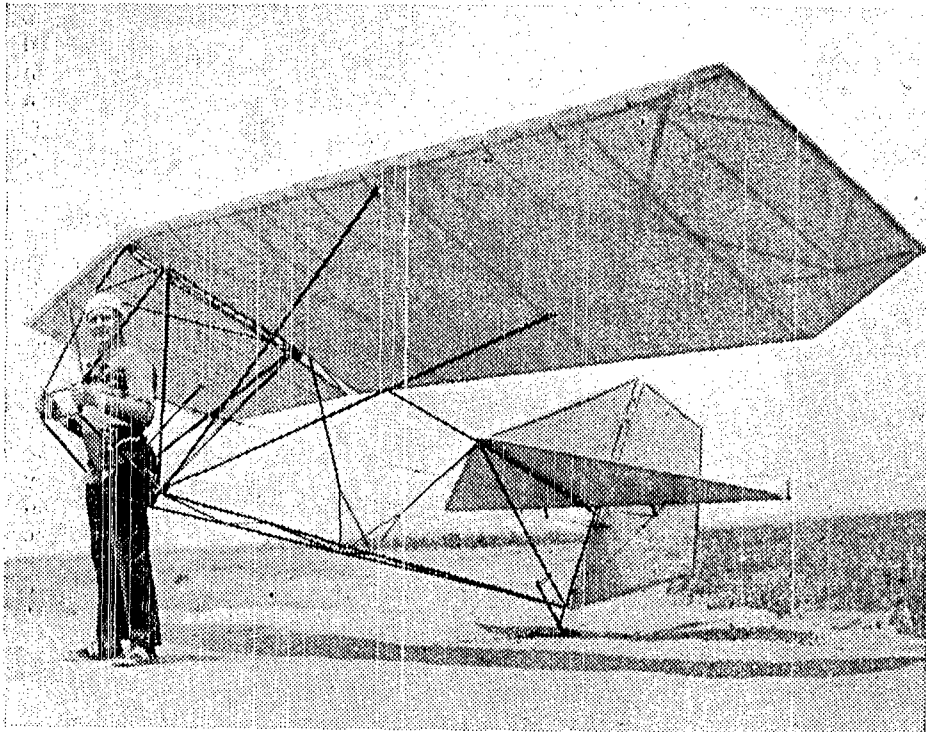
On the whole, when the strength of the German, Swiss, and Austrian opposition is reckoned, the five English sail-planes in the field did as well as could be expected. One of them won a prize on the day for an altitude flight of 9000 feet, and a two-seater glider stayed up for nine hours.

It will be gathered that there are various kinds of sail-planes; and the number of types is growing.

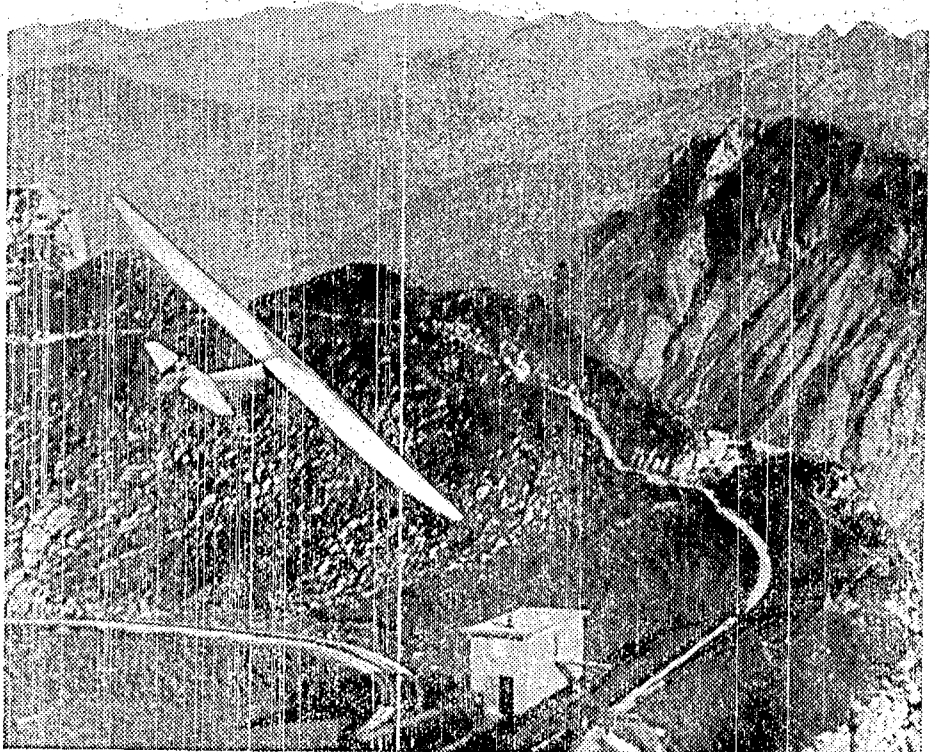
Some of the German sail-planes cost £1000 each. The British planes do not soar to these financial heights. Beginners' gliders, in which the sport is learned and can be practised till efficiency is reached, cost about £50 each; and the bigger sail-planes of the experienced pilots from £125 to £200. In these soaring flights of hours from 50 to 100 miles can be covered. Quite unknown to its citizens, some of them have been cruising over London during the summer.

It is all rather wonderful; and it is not nearly so risky as those who have not tried it might think. Only one serious accident has taken place this year; and though it cannot be denied that gliding machines do sometimes come down with a bump, they do not crash in the way the aeroplane does.

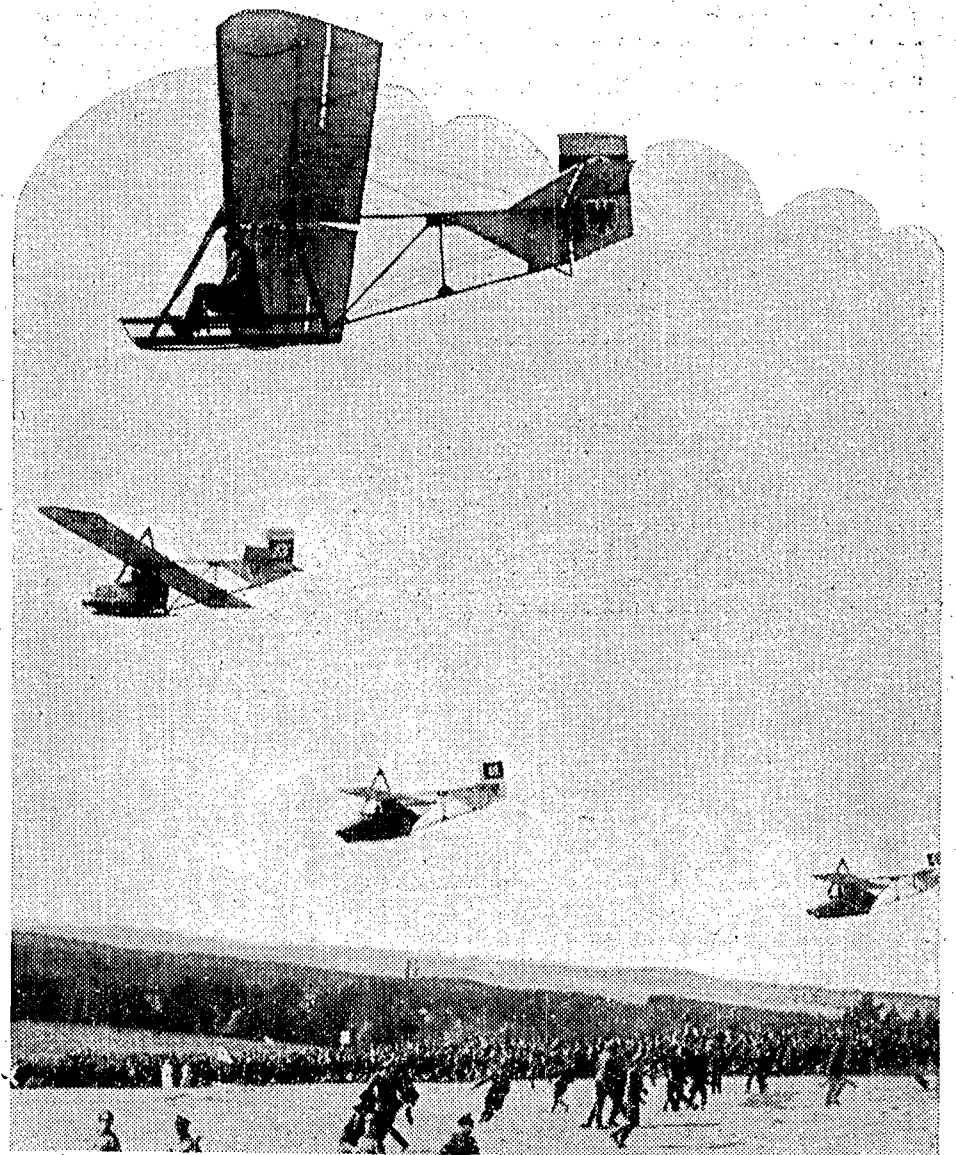
The machines are light enough to be towed home by a car after alighting. It is a sport for youth with a high sense of adventure, and what its future may be none can foretell.



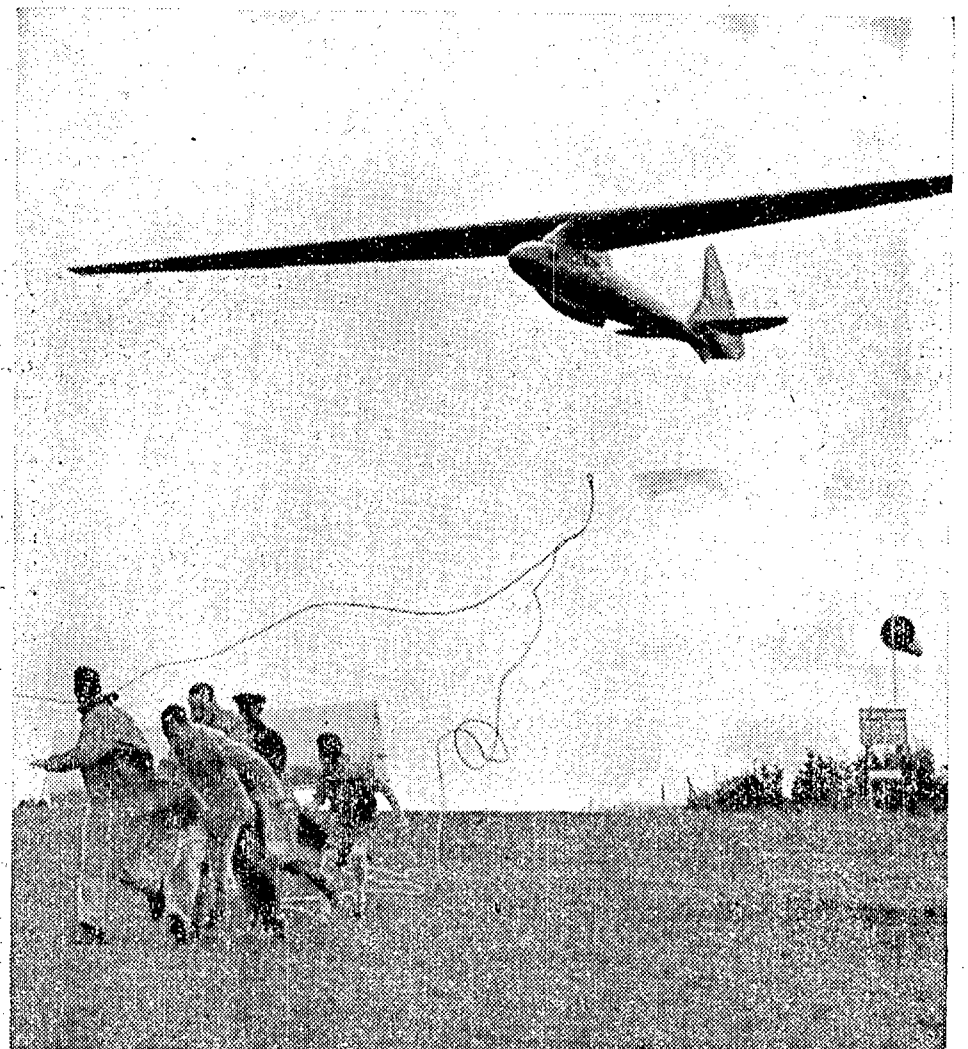
An interesting return to the early days of gliding—an American with wings strapped to his body



A sail-plane soaring above the Alps near Lake Geneva



Four gliders launched together at a German meeting



A take-off by Mr Philip Wills, who has travelled from Dunstable to Dover in a sail-plane

SAMUEL MORSE'S GREAT IDEA

It Lived a Hundred Years

LET us think of one of the greatest benefactors of mankind the world has ever seen, Samuel Finley Morse. His long battle against tremendous odds brought him a marvellous victory 100 years ago last week.

He enabled nation to speak peace unto nation in a new way. He linked the cities of the world, joined country with country, speeded up the transmission of news as no one had ever dreamed of, and gave us a new alphabet.

It was on September 2, 1837, that Samuel Morse, inventor of the electric telegraph, felt the joy of conquest. There were still years of hard work ahead for him, and he was still to suffer many disappointments, but the end was in sight, and he had succeeded in convincing others that he was neither a crank nor a madman.

A Talk in Mid-Atlantic

Morse was the son of a Congregational minister of Charlestown in Massachusetts. After attending Yale College he came to England to study art, and was so successful that he won considerable fame on both sides of the Atlantic. His career as an artist was assured. Every year he was adding to his reputation. He founded America's National Academy of Design, and was its first president. He had Benjamin West for a friend. He won the gold medal of our Royal Academy for his picture of the Dying Hercules.

But he turned his back on all this, for a chance conversation in mid-Atlantic changed the whole course of his life. He had been visiting England a second time, and was on his way back to

America in 1832 when a few passengers began discussing electricity, a subject in which he had long been interested. During the conversation Morse said that if the presence of electricity can be made visible in any part of the circuit he saw no reason why news should not be transmitted by electricity.

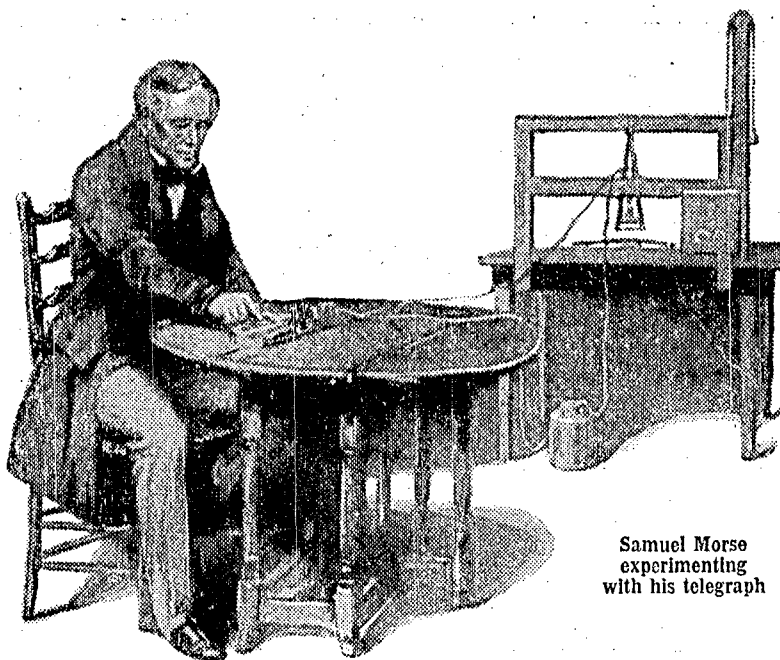
He went on thinking about it, and in a few days produced a series of plans and sketches showing how an electric telegraph might be worked.

Making His Own Machinery

The idea fired his imagination. He could think of nothing else. Back home in America, he turned his studio into a laboratory. People asked for pictures, but he had no time for them. His artist's hands became coarse with hard work. Unable to find assistants, he was compelled to make every part of his machinery himself, casting, shaping, filing from morning till night.

His friends made fun of him at first. Then when they saw him persisting in what they thought was his stupid notion they grew angry. He was wasting his time, making ill use of his natural gifts, squandering money on bits of wire and mechanism, when all the time he might have been painting and adding to his fame. What sense was there in an artist trying to become an inventor?

But Morse would not be side-tracked. He grew poor and then poorer. He lost most of his friends. He failed again and again. He found that his ideas would not work out. He met with every form of discouragement. There was a time when his clothes were shabby and he had no money for new ones.



Samuel Morse
experimenting
with his telegraph

For years he struggled on in spite of defeat, and in spite of the jeers of those who had not his vision. He still retained a professorship in New York University, and there he set up 1700 feet of copper wire. At last, on September 2, 1837, he invited people to witness a demonstration of his electric telegraph. They went with no faith in him, but they came away convinced that he was not mad but sane, not working on something doomed to failure but on an invention likely to startle the world. Till that memorable day he had stood alone; from that day on he had friends who believed in him, and with their help he won a glorious triumph.

For nearly seven years he was repeatedly petitioning the American Congress to give his new method of signalling

a trial, and at last he secured permission to set up an electric telegraph from Baltimore to Washington. On May 24, 1844, he tapped out in the Morse alphabet the words: What hath God wrought?

His queer little telegraph was an instant success. It was taken up in many countries beyond America, and in 1858 he received a gift of £80,000 from seven European countries. New York, which would have left him to starve, set up a noble statue to him, and he died in the sure knowledge that by turning his back on art and devoting himself to science he had earned the gratitude of mankind. His system has been superseded in many ways, but is still widely used, and it was a blessing to the world for a hundred years.

HIS NAME IS ON THE MAP OF THE WORLD

BETWEEN South America's Farthest South and the South Pole lies the Weddell Sea, named after a little-known pioneer born 150 years ago last month.

He was James Weddell, and he came into the world on August 24, 1787, having seen much of it before he passed on in 1834. His father died when he was very young, and there seems to have been little money to spare at home, so James went to sea on a coasting vessel.

About 1805 he began the first of a series of Atlantic voyages, and, though he had had little education on shore, he managed to find time to improve himself, reading all the books on which he could lay hands. By hard study he was able to gain a navigator's certificate, and by the time he was 25 he was master of a ship. An admiral once wrote of him that he was one of the most efficient and trustworthy officers he had ever met, and he seems to have been worthy of this high praise.

Between 1819 and 1821 he had command of a small ship which sailed to the newly-discovered South Shetland Islands, and in 1822 again sailed south in search of seals. He visited the Falklands, the South Shetlands, South Georgia, and the South Orkneys, boldly facing the dangers of unexplored regions in the most unfriendly part of the world. Sailing still farther south, he went on till he was nearer the Pole

than any navigator had ever been before. He found an open sea where he had expected to find a great ice-field, and sailed across it before turning again home, taking with him many specimens of animal life.

He was "the first that ever burst into that silent sea," and in his book describing his voyage he named the sea after George the Fourth, though happily the name was changed to Weddell in honour of the man who put it on the map.

He Discovered Animal Electricity

Luigi Galvani, the Italian physiologist, was born 200 years ago this week.

Coming into the world on September 9, 1737, he at first hoped to enter the Church, but his parents persuaded him to take up medicine, and in 1762 he was appointed lecturer in anatomy at Bologna. His celebrated book on Electricity in Muscular Movement was published in 1791, and six years later, owing to a stupid rule, he was compelled to resign his professorship and was left without any means of livelihood. Before long the Government decided to reinstate him, but in the meantime he had fallen into a feverish decline. He died on December 4, 1798. It is to Galvani that we owe the word Galvanism.

FRANKLIN'S FRIEND IN WORDSWORTH'S VILLAGE

All the summer through there is not a day when pilgrims do not stand by Wordsworth's grave in Grasmere churchyard.

But how many people know anything of a man who sleeps near by? We read of him in Arthur Mee's Lake Counties, one of the latest volumes in the King's England series. He was Sir John Richardson, and this is what Mr Mee tells us about him.

BORN in 1787, he saw Burns nightly at his father's house, received a copy of the Faerie Queene from him, and entered school with his eldest son. At Edinburgh Richardson distinguished himself in science and the classics, and then, having qualified in medicine, joined the Navy as a surgeon.

He had his share of the sea-fighting that followed, and in 1819 accompanied Franklin as doctor and naturalist on the three-years overland expedition in Arctic North America. After two severe winters the party was reduced to starvation in the barren grounds, and headed for Fort Enterprise, first having eaten their old boots.

They reached the frigid Coppermine River without boats or rafts, so Richardson, a man of immense courage and endurance, tried to swim it, towing a line. He had nearly reached the opposite bank when his strength failed, and, turning on his back and swimming till his arms froze, he sank, and was pulled back to his starting-point.

The river at last crossed, five men died and five more broke down. It being impossible to carry them, Richardson stayed with them while Franklin tottered on in search of relief. Three more collapsed, and Michel, a guide, promised to lead them back to Richardson. But, left to himself, he murdered them one by one, ate them, and arrived at Richardson's camp nourished, insolent, and masterful.

It was now a question whether he would murder Richardson or whether Richardson, barely able to move, should dispose of the Indian, who had an arsenal of weapons. There was no alternative; he must kill Michel or be eaten. Chance gave him the opportunity; he had just strength to pull the trigger of his revolver and so end perhaps the most terrible chapter in Arctic annals. He reached safety with the other survivor, a witness of his act, and later published the whole story.

When he was 60 Richardson led an expedition in search of Sir John Franklin, who had loved and honoured him. It was another epic voyage, with almost incredible escapes from sea-ice, and from the perils of a great overland journey after the boats had been abandoned; but Richardson brought all his men safely home. After nearly half a century of public service he settled near Grasmere, the adventurer turned gardener.

THE UPS & DOWNS OF THE WORLD

Sunken Beds and Rising Floors

The startling discovery has been made that in great parts of the Fen district the land has sunk five feet in half a century.

This is no natural subsidence, but the result of the work of engineers. In the old days water was pumped out of the land by means of windmills, which did little more than preserve the natural balance—reducing the quantity of water introduced by rain and snow but leaving the soil still charged with moisture.

But about sixty years ago pumping by steam was introduced; more water was pumped away and the land began to sink. Then came petrol engines, still more effective, and out came still more water, with further subsidence of land. Thus the surface of the land has been lowered on an average an inch a year, till now, it seems, the land is so freed from moisture that a permanent level has been reached, not to be altered unless new floodings outrun the pace of the plant engaged in pumping the water away.

Dwellings Floor Upon Floor

These conditions have stirred the interest of the scientists who at this time of the year toil away at the marvels of the Lake Village at Meare in Somerset, for there they have found scores of examples in which floors have sunk into boggy ground.

Thousands of years ago skilful Britons made rafts amid the floods and raised on them houses of wood, with upright stones for seats.

This ancient village was only a dozen feet above the level of the sea, and the country was subject to floods, the result being that after each serious flood a new floor had to be laid down. We find in the remains of these dwellings floor upon floor, built on brushwood and clay. In some places no fewer than 13 hearths, one above another, have come to light, showing that on 13 occasions the level of the house had to be raised.

THE AIR AND THE SHIPS

A New Protection

The protection of merchant ships in war presents fresh problems with the growth of air warfare.

The British Admiralty has developed special types of escorting vessels to meet the new conditions. Thus, a small but fast anti-aircraft ship is constructed to carry a considerable armament of high-angle guns. Presumably many such escorts would be needed to protect the many convoys needed to supply the nation with food and materials.

In the Great War convoys were protected by destroyers and other small craft which had not to face the menace of air attack. The new conditions are very different.

A Long Life Among the Bells of Kent

The bells of Gravesend have been pealing in honour of the 78th birthday of Mr Edward Hadlow, who has been associated with the choirs and belfries of Kent for 70 years.

At eight he sang in a choir and he helped his father, who was sexton at Harrietsham. He still sings in the Gravesend choir. One of the bells bears his name, for when they were restored 15 years ago Mr Hadlow collected £500 towards the cost, and celebrated the event by taking part in a peal in which all the eight ringers were named Edward.

The Box of Golden Guineas

From a Correspondent

When I was a little boy my great-aunt used to tell me of her uncle John Pillow, a tanner in the lovely Loose valley near Maidstone, who was reputed to keep a box of golden guineas under his bed, and a blunderbuss to protect them by his bedside. Miss Harriet Martineau liked to stay at his house, which, perched on a hill overlooking the valley, was called Mount Ararat.

In those days men hoarded their money, even those who were not called misers. Samuel Pepys records how he buried his money when times were dangerous and unsettled. In our modern times men work hard and accumulate bank credits, but they never see golden sovereigns, or gold francs, or gold marks. What has been called "the great confidence trick" operates everywhere in civilised countries. Debts are paid with slips of paper, or tokens of white metal containing a percentage of silver. A man's wealth is estimated by the amount of credit he can obtain from his banker on account of other men's promises to pay to him, or because he has property which is saleable. Money, as such, has almost ceased to exist, its place being taken by "credit," while hoarding seems futile when it is only pieces of paper that are available.

Tales Out of School

Midhurst Grammar School, three centuries old, has had an investigator among its records, and he has discovered that the school once declined so seriously in popularity that its pupils were reduced to one, and he ran away! That finished the career of the school for twenty years of last century.

They are made of sterner stuff in Scotland, where, at the head of Loch Donn, ten miles from any other village, a school was for many years conducted with ten scholars as its proud maximum, a number slowly dwindling to two, and finally to one. He stayed on till the end, for it was the school that finally left him, not he the school, which was at last closed by the Ayrshire education authorities.

One of the most famous of our schools was also the greatest failure. It never had more than three scholars, yet it is immortal, for it was the tiny grammar school opened by Samuel Johnson at Edial, in Staffordshire. It ended in two of the boys returning home and the third, David Garrick, riding off to London with the master, Garrick to become rich and famous as scholar and actor, Johnson to starve in a garret until sheer courage and ability made him the undisputed head of the literary Europe of his age.

Two Famous Rich Men

Two of the richest men in the world passed on within a few hours of each other last month.

One was a good friend of England, Mr Andrew Mellon, American Ambassador here five years ago.

Mr Mellon recently presented his valuable art collection, valued at £10,000,000, to his country, together with two million pounds for the building of a National Gallery at Washington. The building has been designed by America's famous architect Mr John R. Pope. He, too, has passed on, dying the day after Mr Mellon.

The other rich man was Lord Rothschild, who will live perhaps even longer in memory for his natural history studies and his contribution to human happiness in seeking the causes and remedies for diseases due to insects than for his wealth. At Tring he built up one of the most famous private zoos and natural history museums in the world, the butterflies alone numbering over a million.

MITES FOR MINERS Great Work of Welfare Fund

After 15-years experience the Miners Welfare Fund can claim to have been a great success. The Fund was set up in 1920 by Act of Parliament on the suggestion of the Sankey Coal Commission. It is compounded of mites.

A penny for each ton of coal raised, said the Act. But this, alas! was reduced to a halfpenny a ton in the economic scare of 1931.

Nevertheless the mites built up a big fund, and last year the income was £729,000. Altogether, nearly 16 millions had been raised and spent by the Fund in these 15 years.

Until the Welfare Fund came into existence the miner had to go home in his grime, to bathe before the kitchen fire. Now excellent well-designed bathhouses enable the miner to bathe and change into clean clothes before going home from his work. Splendid for him, and even more so for his wife and family.

No less than £4,400,000 has been spent on these baths and other pithead welfare schemes. On other good purposes the Fund has spent £5,300,000 on games and various recreations, £3,400,000 on health purposes, £1,200,000 on education, and over £1,000,000 on research, and so on.

So today the monotony of the miner's life is happily relieved by playing-fields and parks, club rooms where indoor games can be played, and convalescent homes. There are over six hundred children's playgrounds.

AMERICA'S MISTAKE The Tariff Way

We take this passage from a book by a well-known financial publicist, Mr Leonard Reid, just returned from America.

Mr Cordell Hull and his colleagues and supporters admit that America, with her high tariffs, has been pursuing the wrong policy. He wishes to lead the way towards a liberation of world trade, and he wants Britain to help him. The first big step in his plans, as he sees them, must be a trade agreement with Britain.

If we grasp now the opportunity to start on a series of cooperative agreements with America we can achieve successes, and the result might be quite incalculably great in the direction of world stability, prosperity, and peace. But the opportunity is limited in time.

Competition Result

In C N Competition Number 33 the neatest correct solutions were sent in by Doreen Milner, c/o Mrs Mann, 223 Lynn Road, Wisbech, Cambs; and Celia E. Steggles, 101 Trafford Road, Eccles, Lancs. A prize of ten shillings has been awarded to each of these readers.

The twenty prizes of fountain pens have been awarded to the following, whose attempts were next best in order of merit. Allowance was made for age in judging.

Agnes Allen, Cromer; Margaret E. Badrock, Bolton; Mary Bate, Launceston; Barbara M. Catcliff, Maidenhead; Valerie Chenery, Hitchin; Ronald Crabb, London, S.W.14; Connie Fursden, ChorltoncumHardy; Jean Hunter, London, N.W.9; Solly J. Laredo, Mazagan, Morocco; Mary Parker, Whalley; A. G. Parsons, Hinkley; Peggy Rawling, Hunstanton; Bessie Socket, Skelmersdale, near Ormskirk; Eileen Sinclair, London, S.W.19; Noel Sawyer, Salisbury; Vera Stringer, Rotherham; Alan Teuch, Blydenon-Tyne; Lois Whitaker, Carlisle; Roy Williams, New Tredegar; John Woodrow, Wimborne, Dorset.

Russia Air-Minded

The progress of aviation in Soviet Russia is remarkable, from the heroic Arctic exploits to the training of youth.

Both adults and children are being inured to the sensation of aerial work. In some of the children's parks towers 15 feet high have been erected, from which children can launch themselves into space by safe parachutes. It is a great game for the youngsters, and naturally makes them fearless of air travel.

Join up now
with the
**Happy Healthy
OVALTINEYS**



Every boy and girl should join the League of Ovaltineys. It has been established by the makers of 'Ovaltine' to give happiness to children everywhere. Many thousands of children are wearing the handsome bronze badge and are having the jolliest times with the secret high-signs, signals and code. Fill up the form below without delay.

POST THIS TO-DAY

To the **CHIEF OVALTINEY**,
184 Queen's Gate,
London, S.W.7

I wish to become a member of the League of Ovaltineys. Please send me, free, the official Rule-book of the League.

Name.....

.....Age.....

Address.....

Children's Newspaper, (Write in **BLOCK** letters)
11/9/37

HAMPTON COURT'S GREAT VINE

500 Big Bunches of Grapes a Year

With a stem measuring over seven feet round, and increasing at the rate of half-an-inch a year, the Great Vine at Hampton Court is now yielding its harvest.

Over 500 bunches of Black Hamburgh grapes are cut each year and sold in baskets made by the blind soldiers at St Dunstan's. The tendrils spread over the roof of the glasshouse, and are drastically cut back every year, thus ensuring the magnificent quality of the fruit; but where the roots spread to is something of a mystery, even to the keepers of the vine, who believe that they have made their way to the moist banks of the Thames.

There is a mystery, too, about where the vine came from.

Tradition states that in 1768 a cutting was brought to Hampton Court by the famous landscape gardener Lancelot Brown from a vine which had been planted in 1751 at Valentines Park, Ilford. The parent vine was allowed to degenerate and has disappeared, though the park remains one of the beautiful public possessions of this Essex town, while the offspring at Hampton Court has grown to be one of the most famous vines in the kingdom.

The Peaceful Invaders

The countryside is being invaded, not by the litter lout or the road hog, but by thousands of peaceful citizens. They have come to help the farmer.

They come from the big towns—men and women, girls and boys, many of them with pale faces and weary glances. But the open-air soon puts that right, and they return to their smoky towns brown and fit.

Among the invaders are many Micks and Patricks who have crossed the Channel from the Irish Free State. They make very fine labourers, and are much in demand by the beet farmers of East Anglia and the Midlands. The cultivation of the sugar beet is steadily increasing and this year it is estimated that 10,000 men will be needed to harvest the crop.

During these few weeks it is reckoned that the population of our countryside has increased by 100,000. It is right that the country should have its say, and that, for once, there is a movement from town to country.

Many men and women, instead of holidaying at Blackpool or Margate, decide to work in the fields and orchards. They earn weekly wages varying from 15s to £3 or more, and return home with three things—their pockets well lined, a healthy body, and a new love of the countryside.

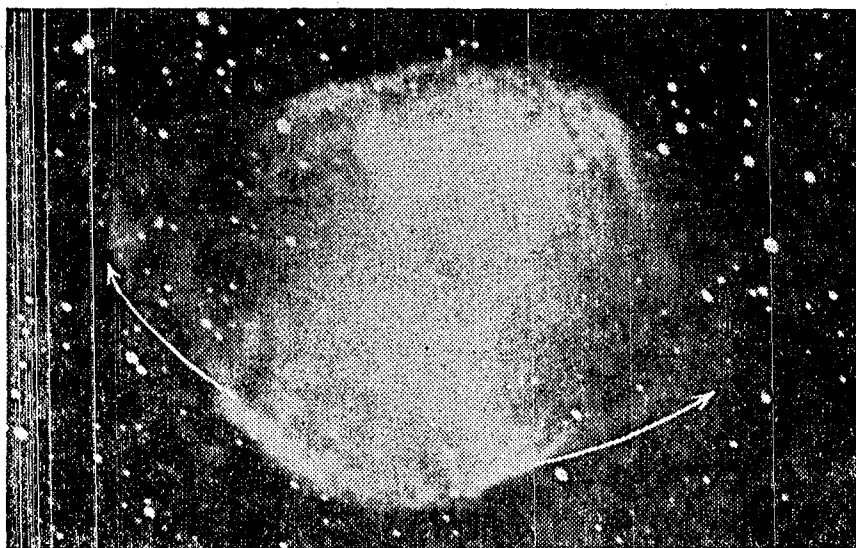
Cecil Rhodes's Birthplace

The birthplace of Cecil Rhodes at Bishop's Stortford, with the house next door, are now ready for the historic objects which are to form the Rhodes Museum.

Mr O'Keefe, the High Commissioner of Southern Rhodesia, who is chairman of the Memorial Trust which has bought and adapted these houses, is asking that anyone with relics of the famous pioneer of South Africa, and willing to present them to the museum, should send them to the Secretary of the Trust at Rhodesia House, 429 Strand, London. He also states that some thousands of pounds have been subscribed to the Trust by admirers of Cecil Rhodes in many countries but that about £8000 is still needed to complete the endowment fund.

THE DUMB-BELL NEBULA

What Happens When a Star Blazes Up



The Dumb-bell Nebula photographed from Lick Observatory

THE marvellous maze of complex streams of light which has been known for nearly a century as the Dumb-bell Nebula may be easily found with the aid of last week's star map if the night be dark and clear. It is indicated as M27, its number in Messier's Catalogue.

When photographed by long exposure through powerful telescopes its dumb-bell shape vanishes and it is revealed in all its glorious radiance, magnitude, and mystery, of which this photograph, taken at the Lick Observatory after an exposure of three hours, gives some idea. The numerous white dots shown are various suns, which, except for the one faintly perceived in the centre of the nebula, are in no way connected with it.

A Vast Whirling System

Some idea of the immensity of this swirl of glowing celestial fire-light may be gleaned from the fact that its apparent diameter, as presented in even a small telescope, is about eight times that of Jupiter at the present time, or five minutes of arc. Now, as the nebula is calculated by means of the central star to be at a distance of some 550 light-years, this apparent size must represent an actual diameter of about five million million miles, or approximately 1600 times the diameter of our Solar System as bounded by Neptune's orbit; so were we as near to the central sun of this vast system of whirling fire-light as we are to our own Sun we should have to travel 49,600 times farther than our Sun to reach its boundaries, a journey that would take about 4,800,000 years though we were speeding continuously at 100 miles an hour.

The journey would be generally through streams of almost ghostly material, and actually far more rarefied than the air we breathe but with much denser masses here and there, the fire-light, or radiance, being produced by the light reflected from the extremely hot fires of the great central sun that lights up this mass of elements, which are actually in an intensely cold condition. It has been found that the whole of this streaming mass revolves round the central sun at various speeds in from 5000 to 10,000 years, a noteworthy circumstance being that the inner portions revolve faster than the outer, just as the inner planets of our Solar System travel faster round the Sun the nearer they are to him.

The Intensely Hot Sun

We have thus in this nebula, with its intensely hot central sun having the terrific surface temperature of some 40,000 degrees centigrade, what might be regarded as the beginnings of a solar system; but there is a more probable alternative, that it represents the re-birth of an old solar system. It can be shown that if our world, his other planets, and the Sun were all involved

in some colossal catastrophe in which the elements composing the planets and satellites became blown out, as it were, and transformed into gaseous vapour and rarefied particles, they would form a colossal nebulous mass approximating in size to a planetary nebula and its central sun.

A remarkable feature suggesting the possible beginnings of a solar system is the elliptical belt of radiance which encircles the central mass; it is faintly perceptible in the photograph and we have indicated it by the white arrows. It suggests a rough rendering of that belt of particles round our Sun which produce the Zodiacal Light.

One of the Nearest Nebulae

Nearly 150 of these so-called planetary nebulae are known, and M27 is one of the nearest, being, as stated above, about 550 light-years distant. What is considered most strange is that there should be so few suns or solar systems in this early stage of stellar evolution in view of the vast number of suns that are in other stages of development. The great majority of suns are in a much more advanced state, and the Universe generally is much older than is represented by these planetary nebulae. The inference, therefore, is that they represent suns or solar systems which from some exceptional cause have gone through a terrific convulsion which has literally blown them back into an early stage. Something similar to this appears to have been witnessed as recently as 1918 when what was called a new star, or Nova, blazed out a little to the south of Theta in Aquila, the brilliant red combustion observed then having since died down into what appears as a planetary nebula not unlike M27 in both immensity and temperature.

Speeding 500 Miles a Second

A somewhat similar eruptive catastrophe, or outburst, occurred in the so-called new star, Nova Herculis, which was seen to blaze up early in December 1934. In this case the velocity of matter ejected from the central sun, which had attained a terrific high surface temperature, soaring outward into space, reached speeds up to 500 miles a second. This sped continuously in an ever-expanding mass of greater tenuity and at a gradually reduced rate for many thousands of millions of miles, until it formed a colossal envelope of rarefied matter, driven outward by radiation pressure very much as are comets' tails by the radiation pressure of our own Sun.

We thus learn what a close affinity exists between what are really misnamed planetary nebulae and the consequences of some of the stellar outbursts, when faint, and more or less old, suns burst into a new life of intense radiance and heat energy, with a new solar evolutionary cycle, which may eventually produce new worlds. G. F. M.

IS STEEL TOO DEAR?

Lord Nuffield's Charge

Those who have occasion to buy anything made of iron or steel know that prices have risen considerably in the last twelve months.

Among other things, the makers of motor-cars, big users of steel in many forms, have found it necessary to raise the price of their productions to compensate for dear materials.

Lord Nuffield, the head of the great Morris firm, complains bitterly of steel prices. He says that since Britain adopted Protection for steel it has risen 25 per cent, whereas motor-car prices have fallen by 50 per cent. He also says that as the steel makers have doubled their output they ought to have been able to economise costs, and that if British prices are not lowered he will be compelled to buy steel from overseas.

The steel makers reply that their prices are economic and properly based on costs, and that motor-car makers could not buy American steel at less than British prices.

The Coming Iron Famine

The world shortage of iron which has so quickly arisen is a warning to mankind.

We do not perhaps realise that several of the chief iron nations of the world rely largely upon imported iron ore. It is their fuel that makes them great iron producers.

Great Britain works with much imported ore, and so does Germany. Germany is so hard put to it that she has started a State industry to work her own ore deposits, which are plentiful in quantity but poor in quality. Italy has to buy foreign ore, and so it is with many other nations.

Sweden and Spain, on the other hand, have relatively big deposits. The United States is exceedingly rich in ore, but it is estimated that her great and increasing production will seriously reduce her ore fields in a short span of years. Russia and China have great deposits.

We have to measure the supply, however, against a rapidly increasing need for iron and steel. So far the greater part of the world uses little iron; what we have to expect is a worldwide demand which will quickly use up the known supplies.

Science no doubt will come to the rescue. Aluminium will replace iron for many uses, and the world of the future will have to utilise iron ores of poor quality.

Making Air Pilots

Since the decision was made to expand the Air Force an astonishing number of new pilots have been trained. Between April 1935 and the present time nearly 4000 young men have been accepted, and as many as 3250 have become qualified or are now under training.

This refers to airmen only. To maintain each man in the air nearly ten times as many skilled workmen are required.

As recently as 1930 Britain had 780 first-line aeroplanes; we have now 1500, a number which is very soon to be expanded to 1750.

A Modern Robinson Crusoe

Dr Fraser Darling of Dundonnell, who has made a special study of the animals and birds of West Scotland, is to spend half the winter alone on Lunga Island, off the coast of Mull. He is hoping to stay on Lunga Island till Christmas, in order to study the habits of seals.

RIVERS

There are no people where there are no waterways. It is only when streams pour down from the hills and rivers flow across the plains that towns and cities spring up. To the little brooks and to the mighty rivers we owe nearly everything.

By the banks of the Nile was born one of the earliest civilisations in the world, and for thousands of years the Yangtse-Kiang has watered plains where unnumbered millions of people have lived. The Ganges, the Sacred River of India, is in a plain which must be one of the oldest of all the homes of men; and as the lives of countless generations have depended directly on its never-failing waters it is not surprising that pilgrims should come to worship at Benares, by which the river flows.

The Great Waterways

When we think of our own little Thames, we are impressed by the lengths of some of the world's greatest rivers. A score of them are over 1700 miles long, and eight flow over 3000 miles before reaching the sea.

There is the Congo winding through the hottest regions of Africa. There is the Yenisei, 3200 miles long, and the Amazon, 4000 miles.

But smaller rivers have often been important. It was the yellow Tiber which added strength to the defences of ancient Rome; and the Bible has over 80 references to the River Jordan, that rather muddy stream which Naaman despised when the prophet told him to bathe seven times in it. Famous of old were the rivers Tigris and Euphrates; and, though the little River Rubicon separating ancient Italy from Cisalpine Gaul was not much more than a stream, it marked the boundary of Caesar's province, and by crossing it he took an irrevocable step.

All down the years rivers and streams have been beloved by those who have long known them. The Volga boatmen sing of their own river. In Vienna Johann Strauss is remembered perhaps more than anything else for his waltz The Blue Danube. American Negroes still sing of old folks way down upon the Swanne River.

And the Little Streams

Robert Burns praised the banks and braes o' bonny Doon. Wordsworth wrote of the River Yarrow; and dear to the heart of Sir Walter Scott was his own River Tweed.

We have our shallow Dee immortalised by Kingsley in The Sands of Dee; and we have in Yorkshire a little stream believed to have been the one which was in Kingsley's mind when he wrote his Water Babies, a story nearly as wonderful as some of the old Rhine legends. The storied Avon, by which Shakespeare walked before he was famous and after he was assured of immortality; the Thames, London's river flowing grandly by the greatest city on earth; the rivers by which placid Izaak Walton used to sit angling and talking—all are among the waters which mean much to us.

Smaller than any of these is Tennyson's brook, which we have followed for miles in Kent and have heard chattering over stony ways in little sharps and trebles, all reminding us:

*For men may come and men may go,
But I go on for ever.*

The Litter Lout Raises Your Rates
Put him down and keep them down

TELEVISION NEARER AND CLEARER

The Easel With a Myriad Eyes

By a Scientific Correspondent

One of the surprises at Radiolympia was a television set for the very low price of 35 guineas. The screen measured six by four and a half inches and gave good results.

The advance in television was indeed one of the outstanding features at this exhibition, scenes from the London Zoo and Whipsnade attracting thousands to the screens in this building.

Now comes news of an invention of outstanding importance which would seem to bring television even nearer.

It is a new invention called the Iconoscope, a glass bulb enclosing in a high vacuum a magic easel on which the picture is thrown by a lens, and a "gun" which focuses the finest possible beam of electrons on the easel.

The easel is really a mosaic made up of an enormous number of electrically isolated globules of silver, treated so as to be extremely sensitive to light. Opposite the screen is a conducting film connected to the wireless beam which radiates the television signals. Each silver globule on the screen acts as one side of a condenser, the electric charge on which is released by the electron beam, and so acts on the wireless signals.

The Iconoscope bulb is mounted in a camera which has a lens like an ordinary camera, and this casts an image of what is before it on the magic easel—about four by five inches. The picture signals produced in the camera are amplified and sent to a wireless transmitter.

A Luminous Screen

At a distant receiving station the wireless impulses are caught by the aerial and led into a Kinoscope, which is a glass bulb with a high vacuum containing another electron gun; but this time, in place of the easel, is a luminous screen. This screen gives off light at any spot where the beam of electrons touches it, and the amount of light depends on the strength of the signal at each moment.

The path traced in the television camera by the electron pencil over the sensitive screen is controlled by electromagnet power in a manner already well known, and, needless to say, the electron pencil tracing its path in the viewing bulb is kept in exact step (or synchronism). Pictures with amazing definition are being transmitted with 441 line scanning. While this work is progressing on an extensive scale, however, it is being done quite privately, but those who know the story of the invention of this wonderful system believe that in it we have found at least one solution of a really practical type of the problem of seeing by wireless.

25 YEARS AGO

From the C N of September 1912

The Lamplighter. Greenford, a little place near Ealing, in London, has a street lamp which has puzzled people as much as Aladdin's must have done.

It is an incandescent gas-lamp, which the lamplighter "puts out" by pulling down one end of a little lever, leaving only a tiny flicker of flame at the by-pass. And, no matter how carefully he put out the light, that light would soon after go up again.

He thought mischievous schoolboys were playing him tricks, so he hid and lay in wait, and to his surprise he saw the light go up with nobody near.

Then the lamplighter made a close examination, and found that this mystery had a simple explanation. A tomtit had built a nest in the corner of the lamp, and to get into the nest the bird was in the habit of hopping on to the lever of the by-pass, so pulling it down and turning on the light!

"My boys and girls," moaned Mrs. Brown,
"Turn every suet pudding down."
Said Mrs. Gray, "They'll never do it
If you use Atora Suet."



Mrs. Brown took her advice;

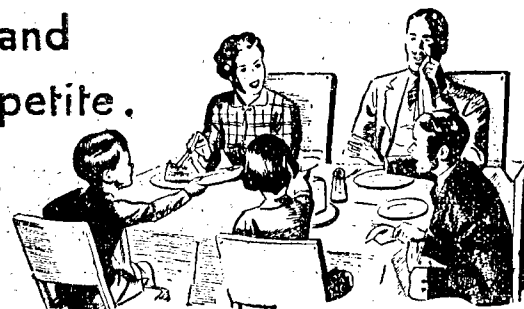
The children said
"This pudding's nice."

They now have pudding
every day

Made in the Atora way.



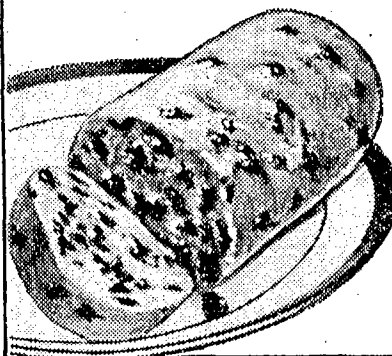
Each boy and girl is strong and bright
With a sound and
healthy appetite.



The difference with "Atora" is simply wonderful.

The secret is the way in which the separate tiny shreds, completely free from fibrous tissue, blend and cook evenly throughout the pudding. No uncooked portions—no large lumps—but deliciously light and dainty down to the last succulent morsel. And all the goodness is there as well. "Atora" is genuine beef suet, with all its rich

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most convenient form for use.



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N. 54a

Hugon's
ATORA
THE GOOD BEEF SUET

Complete in Two Parts

ON SECRET SERVICE

By John Mowbray

Nothing Doing

CHAPTER 3

The Snake-Charmer

BEKKULI? The word came no nearer to David, whose inquiring mind was engaged on a different speculation.

Was the Man of Principle so principled as he professed? Did he pack his clerks off at four for the sake of their health? Or in order to get the office all to himself? No, not to himself entirely, but to himself plus his confidants Jonas Clipp and the silent Miss Merryweather, who had both "grown up in the firm."

David could not help grinning. He had meant to set Mr Aaron Grossmann his own poser; but now that beaming old boy had unwittingly set him a stiffer one!

Then two other problems fell in on his mental parade. What had Grossmann and Hardrup to do with a frowsy old *samp-wallah*? And why did the latter carry bank-notes in his rags?

Four o'clock next day saw him off again to the Borough, where he found his bronzed policeman standing at a corner with his gloves tucked into his belt.

"Good-afternoon!" hailed David. "You remember that snake-charmer?"

"What about him?"

"Oh, nothing," smiled David. "Have you any idea where he lives?"

The large policeman uttered a laugh. "Oh, I see what your game is! You want to take the place of that *samp-wallah*'s lad?"

"No!" David cried, shuddering.

"I don't blame you," the constable declared heartily. "They're nasty, squirming, slimy things, them reptiles. I wouldn't fancy the job of running one in."

But David's face had turned grim. "Oh, I couldn't!" he gasped. "I couldn't touch a snake if you paid me!"

"Well, cheer up! You won't be asked to," grinned his companion. "I reckon you'll find that *samp-wallah* lodging down by the docks. There's any amount of lascar and brown men round there."

David thanked him, and departed straight for the docks. But without any luck, for though he devoted his next two evenings to dockland he never saw a sign of the man he was after.

But on the fourth day, Sunday, his search was rewarded. From a lodging-house in the dingiest of dingy streets his Indian stepped forth, with basket and boy, to perform. He followed them to their pitch, where he joined the spectators and stood right up in the front row, watching intently. He thought the Indian's boy looked tired and ill, nor was he surprised, for that poor chap's job filled him with horror. Ugh! It made David's flesh creep. He waited until they had gone, the Indian lad with the basket strapped across his shoulders, and until the crowd was dispersing. Then, now that he knew where the snake-charmer lodged, he was going off as well to elaborate a partly-formed plan, when he noticed a piece of paper on the pavement.

It was stiff paper, screwed into a ball, and close to the spot where the bearded Indian had squatted. Recalling how hurriedly the man had seized the bag full of pennies and pushed it down among his rags, David thought he could guess where that screwed bit of paper had dropped from.

He picked it up. He would follow the Indian and restore it. It was paper of excellent texture, stiff to the fingers, reminding him—he looked again—of his firm's paper. Without hesitation he unscrewed the ball and unfolded it. Yes, this was one of Grossmann and Hardrup's memorandum forms, and the writing on this inner side was Aaron Grossmann's!

With wide eyes he read every word of it. Bear in mind all I told you. I have succeeded in securing for you the private performance you wished. You will find the Mayfair address in any directory. Present yourself there at half-past nine on Monday evening. Destroy this.

Committing this mysterious missive to the care of his secret pocket David hurried away to the High Street and boarded a bus.

CHAPTER 4

A Private Performance

IN his Mayfair mansion Lord Chartfield, Minister of State, was giving a large evening party. As she took her husband's arm the Duchess of Mayflower said, whispering, "Is Chartfield's new protégé, this snake-man, really a marvel?"

The Duke shrugged his shoulders.

"I can't say," he laughed. "I'll tell you after we've seen him perform. There is nobody at the club who has heard of the fellow. He's a mystery—like the rest of Chartfield's magicians." He laughed again. "Magic's almost a mania with Chartfield. Consider how many weird creatures he's sprung on his friends!"

"Ah, here comes Sir Richard Wakeling! Perhaps he can tell us."

But Sir Richard could only offer an ambiguous smile, as he passed on to join the other guests in the big drawing-room, where a druggist had been spread across the carpet for the mysterious snake-charmer.

So they seated themselves in the chairs surrounding the druggist, and, as soon as their host had come in and taken his own chair in front, he glanced round the company and gestured for silence. In the hush that followed a footman threw the communicating doors open and there entered, slowly and quietly, a straight, towering figure.

It was that of a grey-bearded Indian, wearing a turban and enveloped from shoulders to feet in a sweeping white robe, fastened at the breast by a single large ruby.

To the Minister only he bowed, with grave dignity. Then, seating himself on the druggist, he clapped his hands twice.

This brought his assistant, a lad as dark-skinned as his master, in a linen garment which left his legs and arms bare. On his back was strapped a basket shaped like a gourd. He unsling it and set it down, then sat down, cross-legged, beside it. Looking straight in front of him with a gaze that appeared to see nothing, he sat thus so impassively and so mutely that the company was reminded of some remote idol. No one stirred. No one whispered.

In this silence the Indian allowed a full minute to pass, while he kept his eyes all the time fixed on those of the Minister. At last, releasing a breath, he drew the flute from his breast and began to play very gently. Then at last the lad moved and raised the lid of his basket.

The notes of the flute rose and fell again.

And now a shuddering exclamation ran round the room, as the swaying head of the giant cobra appeared, and as coil by coil the reptile slid down to the ground. Gliding across the druggist it came to its lord, past the silken skirts of the ladies, past feet withdrawn hastily, still gliding on, with its body in ripples and waves and its flat forehead the personification of evil.

JACKO LOSES HIS HEAD

ONE day Adolphus decided to go for a long walk. Jacko wanted to go too. "Come on, then," said Adolphus grudgingly. "If you're game for stepping it out."

Jacko stepped out so quickly that soon his brother was quite puffed.

"Look here!" he said. "You nip

Its malevolent eyes, unwinking in the bright light, were fastened upon the ruby at its lord's breast, which had now begun to glow with the colour of blood.

It was curious how that stone appeared to take fire. But the Indian, while he played on and while the snake danced for him, never once removed his own eyes from the eyes of the Minister. Nor when he ceased, nor when his boy had sprung forward, seized the cobra and flung it back into its basket, did the Indian lift that deep, intent gaze from Lord Chartfield. But, rising now and approaching his host, the man leaned towards him and uttered something in undertones. Then followed a strange thing. For, signing to the others to stay where they were, Lord Chartfield left his chair and went through the doors with the snake-charmer.

The company waited in astonishment. Some of them said that his lordship had walked out of the room like a sleep-walker. Others laughed and declared it was all a part of the show, that the Indian and Chartfield were gone to prepare more magic.

They agreed on this when the Indian's attendant jumped up, having fastened the lid of his basket, to follow his master. He went with a singularly vigorous and resolute step.

Then Sir Richard Wakeling slipped from the room.

CHAPTER 5

David Explains

WHAT was happening? They never knew. The excuse which cleared the room presently and sent them all home served well—as it serves to this day.

So none of those guests who tripped away, chattering about the performance, ever knew how Sir Richard Wakeling and the snake-charmer's dark-skinned attendant had burst together into a Minister of State's study, and how they had found him there under the hypnotic influence of Nasir Khan, Chief of the Bekkuli tribesmen, who, fearing nothing on earth (as repute said of him), had been about to drag from his mesmerised victim every detail of the plans to suppress his wild tribesmen.

None save Sir Richard and David ever knew that.

But there was another person to be reckoned with, a man of high principles.

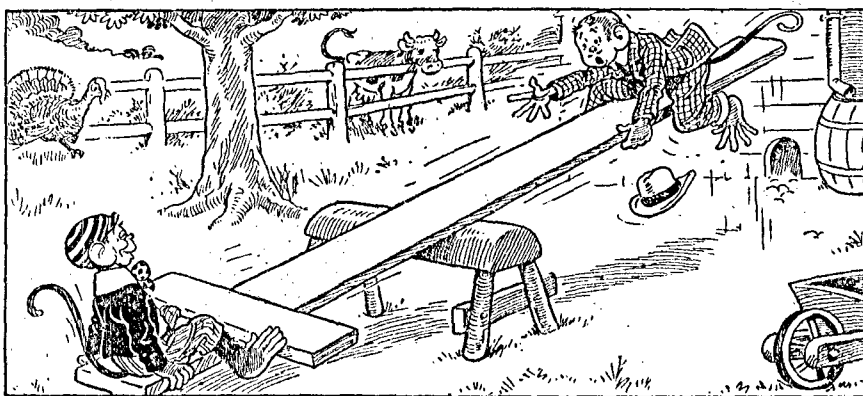
"What are you doing about Grossmann?" David asked Sir Richard next day.

Sir Richard smiled grimly. "You can take it from me," he replied, "that your excellent Aaron won't sell any more arms to the Bekkuli; not he. Nor be paid for them in bank-notes in his office. Nor paid for anything else in that office of his."

They jumped on it, but it wasn't much good, their balance was too uneven.

"Half a jiffy!" cried Jacko, grabbing a wooden plank and weighting his end down with it.

Adolphus promptly shot up sky high. "Careful now," he ordered. "You'll have to let me down gently."



"Let me down!" stormed Adolphus

across this farmyard and ask at the house for some milk."

Jacko climbed over, but in no time he was back again, breathless and red in the face. "Gosh!" he panted. "A great brute of a turkey chased me across the yard."

Adolphus doubled up with laughter. "That's what I sent you for," he teased. "Thought you'd like a look at your Christmas dinner."

At the end of the yard was a see-saw.

"Don't worry!" retorted Jacko. "You're not coming down yet. You're stopping up there to think about your Christmas dinner!"

"Let me down!" stormed Adolphus.

Jacko did! But not as his brother intended, for just then the angry turkey came strutting along. Jacko promptly lost his head, sprang off the see-saw, and scampered for dear life.

Biff! Away shot the plank, and Adolphus came down with a wallop!

We've closed it, David. Messrs Grossmann and Hardrup are finished!"

"Bad luck on their staff, sir," said David. "Oh, they'll find other jobs. But they'll have to work longer hours, I fear," laughed Sir Richard.

"And what about Nasir Khan, sir? What will you do with him?"

"Well, having completed his financial dealings with Grossmann, he had booked his passage home on the liner tomorrow, calculating, the old fox, to take our plan of campaign with him. He's sailing tomorrow, all right; we're seeing to that—but thanks to you, David, there'll be no Bekkuli rising. Thanks to you, David."

That was twice Sir Richard had stressed the importance of David's discoveries.

"Did Nasir Khan tell you, sir, how long he'd been masquerading in London?"

"Yes. He told us everything. He'd been here five weeks, to see that Grossmann sent out the arms. It was a clever masquerade, too, that of a snake-charmer! Oh, I take off my hat to the Khan. He's a dashing old scoundrel!"

"Yes, isn't he?" said David, who looked very tired. "Well, I've told you all my part of it, sir," he went on; "except that when I first got on to the scent I only intended to beard Mr Aaron Grossmann to ask him flat what that old *samp-wallah* had been doing in his office. I was going to say, 'I've found out where he lodges, Mr Grossmann, so if you'd rather not tell me I'll go and ask him.'"

"I'll go and ask him."

"I'll go and ask him."

"Yes, I was jolly dense there—terribly dense. It was only yesterday morning while I was dressing that your mention of the Bekkuli flashed across me. I'd had my head too full, sir, of evening classes for office boys."

"But when you connected Bekkuli you changed your plan?"

"At once, sir. I helped myself to leave from the office and found that policeman I told you of. I reminded him of the dare-devil chief who used to charm snakes for fun, and I asked what crowd or tribe that chief had belonged to. He said, The Bekkuli. Phew! Didn't that give me a start, sir! So off I piped to the lodging-house and found the old bird. He spoke jolly good English—"

"Did you know then that his boy was laid up?"

"No. But the day before I had spotted how ill he looked. Of course, old Nasir jibbed at first at my offer, but I promised him I was pretty useful with snakes—from head to foot David shivered—" and though he'd no idea that I knew of his evening engagement I was counting on that to turn the scales in my favour. For he wouldn't have clucked that engagement on any account."

"No. You were smart," said Sir Richard. "And what was your idea then in replacing his boy?"

"To get to the show in Mayfair with him and watch out for tricks."

"Did you suspect he might mean to use a poisonous snake?"

"Now you ask me point blank, I own that I did, sir. Remembering that the policeman had told me how Nasir used to astonish our officers by charming snakes straight from the jungle, without their fangs drawn, I did suspect at first that he might mean his snake to bite someone, though I didn't see how he was going to get away with it. But directly he'd engaged me he showed me all the snakes before letting me touch them. All had their fangs drawn. 'That'll show you you've nothing to be afraid of,' he said. I said to myself, 'So it's some other game he's up to. Keep your eyes skinned, David.' For he let out that he was going to perform to a Minister of State."

"Yes, I see. Grossmann's memo had only shown you that the engagement was very important. But its warning of 'Destroy this' had roused your suspicions."

"Exactly, sir. So after he had engaged me, and I'd slipped off on an excuse, but actually to ring you up, sir, and get you to the party, I spent all the rest of the day in Nasir's lodgings, and he stained me well, and I practised with the snakes."

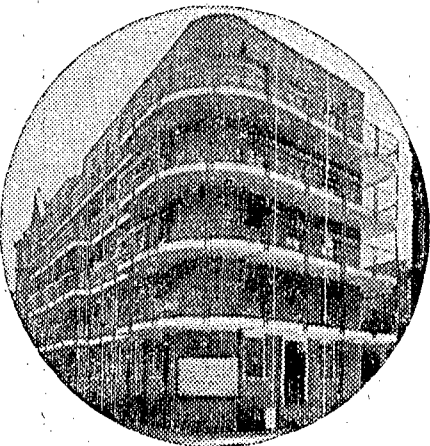
"And I'm glad you arranged it so well, David. It was indispensable that I should catch the Khan at it myself. Otherwise I daresay I could hardly have believed it. But there's another thing I can hardly believe yet," Sir Richard continued, his grave eyes full of approval. "I can hardly believe that you could have brought yourself, lad, to seize that cobra and toss it into its basket!"

With a wry grimace David answered, "Sir, I just had to. I couldn't otherwise have faced up to my job."

THE END

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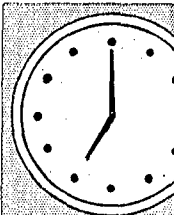
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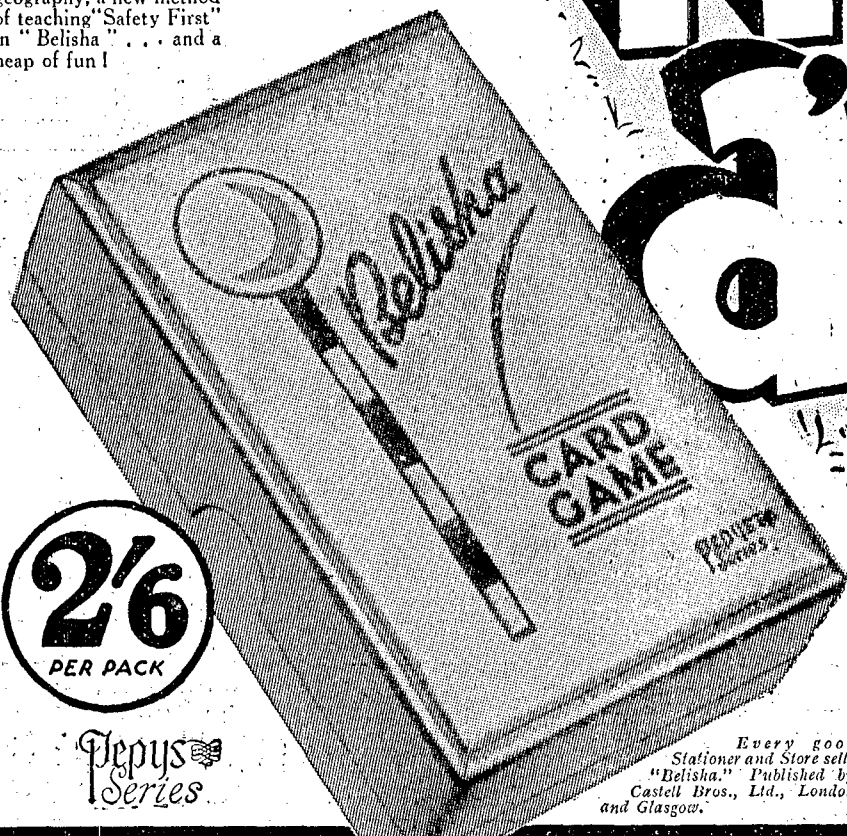
All the family can enjoy
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and again the way to
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Played on the familiar
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are taken on a tour of
England and Scotland,
many of the cards bear-
ing beautiful pictures in
colour of famous beauty
spots.

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the road, some show how
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CHILDREN'S NEWSPAPER

September 11, 1937

Every Thursday 2d

Arthur Mee's Children's Encyclopedia will be delivered anywhere by the Educational Book Co., Tallis Street, E.C.4.

THE BRAN TUB

The Inmates of the Zoo

THE superintendent of a small zoo was asked how many birds and beasts he had in his garden. "Well," said the superintendent, "I cannot remember exactly, but I know there are 36 heads and 100 feet." The little boy set to work with paper and pencil, and soon had the correct number of birds and beasts.

How many were there of each? *Answer next week*

Peter Puck on School

I CAN'T get on with Latin, It puts me all at sea. Virgil, Homer, Livy—gosh! They're all just Greek to me.

A Fish That Climbs on a Tree

A FISH that will climb on to the roots of a tree to bask in the sunshine is found in Queensland, Australia, and round the Indian Ocean.

The mud-skipper lives near the low-tide mark on muddy flats and gets its name from its habit of skipping a yard or so over the mud. Mangrove trees grow in the tidal zone and at low tide their roots are exposed. The modified fins of the mud-skipper enable it to climb the roots of the mangrove trees and take a sunbath.

Ici on Parle Français



Le nid La mouette La falaise
nest gull cliff

Les mouettes font leurs nids sur les hautes falaises.

The gulls build their nests on the high cliffs.

Points of View

THE eager young dramatist was airing his views.

"What we need is a powerful play that will fill the audience with tears."

"Maybe you are right," replied the elderly theatre manager. "But what I should like to get is a play that would fill the tiers with audience."

What Happened on Your Birthday

Sept. 12. Marshal Blücher died 1819
13. Wolfe killed at Quebec. 1759
14. Dante died at Ravenna. 1321
15. Isambard Kingdom Brunel died. 1859
16. Gabriel Fahrenheit died. 1736
17. Philip IV of Spain died. 1665
18. Dr Johnson born. 1709

Beheadings

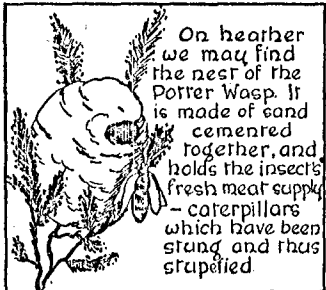
I HAVE used all my whole this puzzle to frame, But if you behead me then slaughter you name; Behead me again, and not dead, as supposed, For I still live and breathe, but am much indisposed.

Answer next week

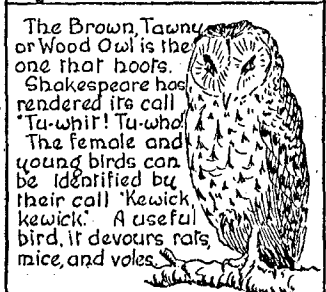
Crystal Grasses

CRYSTAL grasses are very beautiful, and they are easily made. Buy a pennyworth of alum crystals and dissolve these in a cup of very hot water. Now collect some of the flowering grasses which are so common in fields and place six or more of these head downwards in the alum solution. After about ten minutes take the grasses out and arrange them the right way up in a vase. When the

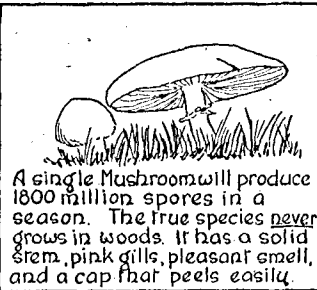
In the Countryside Now



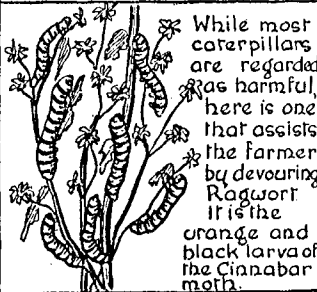
On hearth or we may find the nest of the Potter Wasp. It is made of sand cemented together, and holds the insect's fresh meat supply—caterpillars which have been stung and thus strangled.



The Brown Tawny or Wood Owl is the one that hoots. Shakespeare has rendered its call "Tu-whit! Tu-who!" The female and young birds can be identified by their call "Kewick, kewick." A useful bird, it devours rats, mice, and voles.



A single mushroom will produce 1800 million spores in a season. The true species never grows in woods. It has a solid stem, pink gills, pleasant smell, and a cap that peels easily.



While most caterpillars are regarded as harmless, here is one that assists the farmer by devouring Ragwort. It is the orange and black larva of the Cinnabar moth.

On Strike

A CUCKOO went back in his clock, And shut himself up with a shock.

"I'll not strike any more, I won't open my door; If they want me," he said, "they can knock!"

Pied Proverb

MAKE a familiar proverb from these letters:
aa bb dd ee hhhhh iiiii nnn oo rr ss tttt u.v.w.

Answer next week

Treasure Trove



Oh, what a lucky find! Here's buried treasure hid. I'd be happier still in my mind If I knew how to open the lid.

LAST WEEK'S ANSWERS

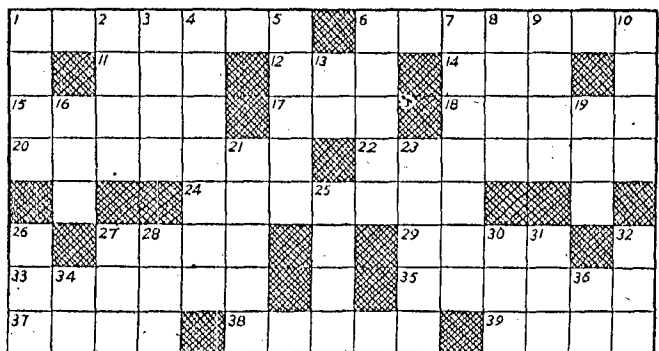
Mr Smith's Family
Six daughters and one son
Word Diamond
S
A
L
E
S
L
I
N
G
E
N
D
G

The Mysterious Objects. The Roman number XIII. Take away the three I's and X remains; draw a horizontal line through the XIII and the upper half will be VIII.

The CN Cross Word Puzzle

Abbreviations are indicated by asterisks among the clues below. *Answer next week*

Reading Across. 1. Ready. 6. To make bigger. 11. To trouble. 12. We breathe this. 14. Edge. 15. This provides light reading. 17. Possessive pronoun. 18. A hood formerly worn by pilgrims. 20. The process of rubbing out. 22. To witness. 24. Places of amusement at pleasure resorts. 27. Commonly called flag. 29. Tidy. 33. A legislative body. 35. To regain one's liberty. 37. Despatched. 38. Heavenly bodies. 39. Small island in a river.



Reading Down. 1. To diminish. 2. Molten matter from a volcano. 3. Reclines. 4. Not allowed. 5. Profits. 6. The crime of fire-raising. 7. Field plants. 8. Dramatic entertainment in which gestures predominate. 9. Title of a Mohammedan chief. 10. Forest plant. 13. Pronoun. 16. A spherical body. 19. Commander of the Royal Victorian Order. 21. Fertile tracts in the desert. 23. Form the skeleton. 25. A notion. 26. Donkey. 27. A lodging-house. 28. Rodent pest. 30. Eminent flying-man. 31. A famous bridge spans this river. 32. A snare. 34. Early English. 36. Post Office.

Five-Minute Story

The Handyman

EDGAR's birthday present from Grandma was a fine set of tools, business-like saw and hammer and chisel and pincers, which a real carpenter would not have been ashamed to handle. Edgar got busy at once, and made a set of bookshelves for his own room and a new kennel for the puppy.

One evening when he was doing his homework he heard a tapping sound.

"Is that you, Grandma?" he said. "Why are you tapping?"

"It's my chair," said Grandma. "One of the legs has worn a little shorter than the rest."

"A job for my saw," said Edgar, springing up at once.

"It's not very much," said Grandma.

Edgar turned the chair upside-down and measured the legs with his rule.

"Only one-eighth of an inch," he announced.

"Can you take exactly that amount off each of the other legs?" asked Grandma.

"Oh, yes," said Edgar confidently, marking the legs with a flat carpenter's pencil.

It was too dark to work in the shed, so he spread a newspaper on the floor to catch the sawdust, and set to work. Three little discs and a heap of sawdust soon showed that he had used his saw to some purpose.

"I'd better rub them down before you use the chair," he said, surveying the splintered ends of the legs doubtfully.

This done, he set the chair on its legs, and Grandma took her seat again. To Edgar's dismay the chair wobbled badly as she sat down.

"I'll have to try again," said Edgar, picking up the pieces he had cut off and measuring them one against the other.

"Well, go on then," said Grandma, once more giving up her favourite chair.

The legs were all considerably shorter when Edgar had finished his second attempt, but still the chair did not stand firmly.

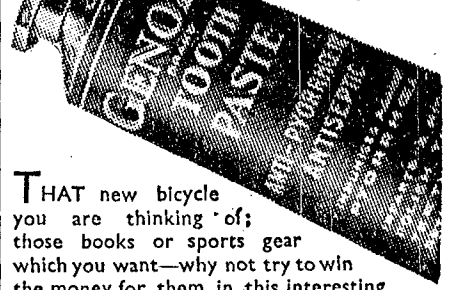
"I'm afraid you'll have no legs left before I—" Edgar began ruefully.

"I've an idea!" said Grandma. "What I really want is a rocking-chair! The rockers were put in the loft when my old chair got broken. Do you think you could borrow Dad's gluepot and set these legs into the rockers?"

Edgar was distinctly more successful on this new task than he had been with the first one. By the next morning the glue was firmly set; and Grandma is not the only one who likes to sway gently in her new-old rocking-chair.

AN INTERESTING COMPETITION

First Prize **£10** Second Prize **£5**



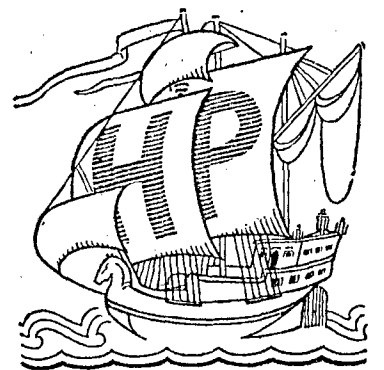
THAT new bicycle you are thinking of; those books or sports gear which you want—why not try to win the money for them in this interesting competition? Every girl or boy can enter and all stand a chance of winning large money prizes. Genozo Toothpaste will make your teeth beautifully white and clean. It does not harm the enamel AND it contains a special emulsion which protects your gums against germs.

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sauce

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